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PICTORIAL COMPOSITION IN PHOTOGRAPHY

BY

ARTHUR HAMMOND, F.R.P.S.

ASSOCIATE EDITOR OF AMERICAN PHOTOGRAPHY

Fourth edition

1946
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BOSTON

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PREFACE TO THE THIRD EDITION

THE tremendous increase in enthusiasm for amateur photography in the last few years is due very largely to the great popularity of the miniature camera. Most of the emphasis, however, has been laid on technical and scientific achievement rather than pictorial, which seems to have been lost in the shuffle.

The increased speed and greater color sensitiveness of the present day films have created a widespread interest in doing photographic " stunts," and the tendency today is to seek subjects that are startling, bizarre and often crude. Like some of the modern music, present-day photography is loud and blatant, and attracts attention to itself by its complete rejection of all the niceties of good taste, refinement and restraint that marked the earlier periods of pictorial photography. Instead of truthful tones and subtle values, we have exaggerations and distortions which are sometimes rather unpleasant. We see black skies with lumps of white, representing clouds, that overpower a summer landscape; and dark and solid shadows that indicate gross underexposure, which is hardly excusable in view of the far greater speed of modern films compared with the old standard films. The distance often is not distant, which is the result of a lack of understanding of the proper use of panchromatic materials and filters.

The increased possibilities resulting from better materials and methods have been misunderstood and often misused by the eager enthusiast who has been so beguiled by the eloquence of the manufacturer and salesman that he has wandered off on the wrong track and, in reaching for perfection, has often been led to use methods and materials that make it more difficult to secure the result he wants. Grain is apt to occur when ultrarapid panchromatic films are used for subjects that do not really call for extreme speed and complete color correction, and in trying to eliminate grain, some of the qualities in the negative are also eliminated which are needed in order to make it suitable for yielding pictorial results. In an effort to secure correct color reproduction, atmospheric effect and the suggestion of separation of planes are often lost.

In many cases this is merely the result of a lack of appreciation of just what are the important attributes of a picture and a lack of understanding as to how they may be attained; so, in revising this third edition of " Pictorial Composition in Photography," I have endeavored to explain to the enquiring novice how he can best take advantage of the undoubted improvements in the equipment and materials of today and how he can use them to improve his pictures.

It often happens that materials and methods that are of inestimable value to the scientific or commercial photographer are not so well adapted for pictorial photography, and the artist is master of his medium only when he understands it thoroughly and completely.

When Major Stevens wanted to photograph a mountain range more than three hundred miles away, he was able to do so by taking full advantage of the available possibilities for penetrating atmospheric haze, but when an artist wants to show in his picture a delicately hazy and atmospheric distance, he does not adopt the same methods that Major Stevens found to be so efficient for his purpose.

Such things as this are not always clearly understood by the beginner in pictorial photography and it is such things as this that I have endeavored to explain, not with any idea of belittling recent achievements, but rather of assigning to them their true value.

Out of the two million or more people in America who use cameras it is estimated that only a few thousand or so are interested in making pictures for exhibition. Nine hundred and ninetynine out of every thousand camera owners use photography as a means of livelihood; in scientific research; as an excuse for using some of the numerous gadgets and weird chemical concoctions that are being put on the market almost every day; as an item of baggage on a vacation trip; or they leave the camera on a shelf and very rarely use it. The remaining one in every thousand likes to use his camera in much the same way as a painter uses his brushes and pigments — as a means of making pictures.

These people are craftsmen as well as artists and they realize that photography is a craft rather than an exact science, and that it can be mastered only by practice and long experience.

In this book, therefore, I have endeavored to point out some of the ways in which the camera may be controlled and guided and how the craftsman may make the most of the artistic possibilities of his chosen medium.

Scientists, chemists, engineers and optical experts have devoted much thought and endless assiduity to perfecting photography as a flexible and controllable medium of representation, and the artist can avail himself of its extraordinary responsiveness and use it as a means of artistic expression. But he must master photography and not let it master him, nor should the artist allow himself to be led astray into intriguing bypaths. There are tremendous possibilities in straightforward photography — perhaps more than are often realized. If the pictorial photographer will try to keep in mind some of the fundamental precepts and principles of artists in other media, whose work has lived through many more centuries than photography has yet known, and if he will apply these principles in his own use of the comparatively new craft of pictorial photography, he will find that it will spread before him an abundance of alluring problems and possibilities.

The mastery of these problems offers much enjoyment to the artist who likes to get his effects with delicate values and subtle gradations of tone rather than with the lines of the draughtsman or etcher or the color of the painter. The study of landscape values, for example, is one of the absorbing problems of the pictorial photographer that needs much serious thought and experiment for its proper understanding. Let us see how this and other problems may be solved.

Boston, Mass. June, 1939

PREFACE TO THE FOURTH EDITION

THE steady demand for this book since it was originally published in 1920 has made it necessary to print a fourth edition. Some slight changes are noticeable in the general outlook on pictorial photography since 1939, when the third edition was issued. There is today considerable emphasis on "control" and many salon exhibitors make paper negatives or work up their prints quite extensively. They tend to display photographic virtuosity in the prints rather than pictorial imagination, and in the selection of subject material there is a leaning towards the cute subjects — babies, kittens and puppies — or the human interest, story-telling subject. Sometimes the inherent artistic possibilities in the photographic process are overlooked or neglected. The outstanding characteristic of photography as an artistic medium, which is its ability to reproduce infinitely delicate and subtle nuances of tone gradations, often is sacrificed for tremendous contrast and "impact", and the opportunities for control that are possible by straightforward photography are often neglected or are unappreciated. The old-timer who used platinum paper had to get really fine negatives because there was little or no possibility of controlling the print, but there seems to be a tendency today to forget that fine print quality starts with the negative. I hope that those who realize this may find some helpful suggestions in this fourth edition.

Boston, Mass. June 1946

CONTENTS

CHAPTER PAGE

PREFACE vii

LIST OF ILLUSTRATIONS xiii

I. GENERAL CONSIDERATIONS 1
Learning to See Pictorially — The Mechanics of Suggestion — Suitability of Subject — Modernism

II. PICTORIAL COMPOSITION IN PRINCIPLE 22
Spacing — Massing — Lines — Balance — Notan — Suppression of Detail — Accent — Figures in Landscape — Genre

III. PICTORIAL COMPOSITION IN PRACTICE 46
Landscape Values — Color Sensitivity of Films — Facts About Color — Aerial Perspective — Use of Filters — Film Speed and Fine Grain

IV. EXPOSURE AND PRINT QUALITY 70

V. LINEAR PERSPECTIVE 77
Short and Long Focus Lenses — Distortion of Lines and Values — Simplicity — Choice of Subject Matter — Emphasis

VI. APPLYING THE RULES 87
Portraiture—Pattern—Landscape Work—Sunrise and Sunset Pictures — Still-Life Studies

VII. THE TECHNIQUE OF PICTORIAL PHOTOGRAPHY 106
Negative Developers — Bromide Enlarging — Toning — Blue Toning — Bromoil — Finishing the Print — Sending to Photographic Salons

VIII. ABOUT THE PICTURES 132

INDEX 154

ILLUSTRATIONS

FIGURE		
1	An English Lane	Arthur Hammond, F.R.P.S.
2	Florida Beach	Arthur Hammond, F.R.P.S.
3	Running in to See Mr. Lincoln	Arthur Hammond, F.R.P.S.
4	The Scout	Dr. Julian Smith, F.R.P.S.
5	Judith	John Hutchins
6	The Lightkeeper's House	Frank R. Fraprie, F.R.P.S.
7	Semi-Lunar	Arthur Hammond, F.R.P.S.
8	Wet Water	Arthur Hammond, F.R.P.S.
9	Gloucester Fisherman	Arthur Hammond, F.R.P.S
10	" Is It Nothing to You? "	Arthur Hammond, F.R.P.S
11	Staten Island Ferry	Arthur Hammond, F.R.P.S
12	Surf at Bass Rocks	Arthur Hammond, F.R.P.S
13	White Swan	Arthur Hammond, F.R.P.S
14	Winter Night	Edward Alenius, F.R.P.S.
15	Budding Contenders	Adolf Fassbender, F.R.P.S.
16	The Explorers	Arthur Hammond, F.R.P.S.
17	A Connecticut Hillside	Arthur Hammond, F.R.P.S.
18	An American Boy	Arthur Hammond, F.R.P.S.
19	Sun on the Roof	Arthur Hammond, F.R.P.S.
20	News Building	Arthur Hammond, F.R.P.S.
21	Sumach Lane	Arthur Hammond, F.R.P.S.
22	Winter Eve	Gustav Anderson
23	A Study in Nudes	Charles Shannon
24	Cockers	Franklin I. Jordan, F.R.P.S.
25	Summer	Arthur Hammond, F.R.P.S.
26	The Frozen Stream	George F. Slade
27	The Frozen Stream	Frank R. Fraprie, F.R.P.S.
28	Sailing	Arthur Hammond, F.R.P.S.
29	Gas Tank	Arthur Hammond, F.R.P.S.
30	Empty Benches	Arthur Hammond, F.R.P.S.
31	Power	Arthur Hammond, F.R.P.S.
32	Radio City	Arthur Hammond, F.R.P.S.

FIGURE		
33	TAUSHANNOCK FALLS	Arthur Hammond, F.R.P.S.
34	ALL WET	Arthur Hammond, F.R.P.S.
35	GAY AND TESSA KINDERSLEY	Dorothy Wilding
36	EARLY SPRING	Arthur Hammond, F.R.P.S.
37	EVENING SHADOWS	Arthur Hammond, F.R.P.S.
38	WARMTH OF THE WINTER SUN	Frank R. Fraprie, F.R.P.S.
39	SUNRISE	Arthur Hammond, F.R.P.S.
40	SYMBOLS OF AUTUMN	W. Dovel Le Sage, A.R.P.S.
41	WANDER BIRD	Arthur Hammond, F.R.P.S.
42	CAPE ELIZABETH	Arthur Hammond, F.R.P.S.
43	THUNDER OVER AMALFI	Frank R. Fraprie, F.R.P.S.
44	THE ONE THAT GOT AWAY	Arthur Hammond, F.R.P.S.
45	APPLE VALLEY	Arthur Hammond, F.R.P.S.
46	SUNSET AT STONY BEACH	Frank R. Fraprie, F.R.P.S.
47	SHELL BEACH	Arthur Hammond, F.R.P.S.
48	SEA OATS	Arthur Hammond, F.R.P.S.

PICTORIAL COMPOSITION

CHAPTER I

GENERAL CONSIDERATIONS

FOLLOWING the introduction of miniature cameras, the interest in photography has been steadily increasing and as yet there is little or no indication that this interest is beginning to wane. The world-wide enthusiasm for photography is largely due to the fact that there is something in it that appeals to all kinds of people. Those who are scientifically and mathematically inclined can have a lot of fun with gammas and characteristic curves; those who are interested in chemistry will enjoy concocting a variety of developers and working out problems in connection with the reduction of grain in negatives; and the science of optics, too, offers alluring problems to those who are interested in the study of light and its transmission through a lens.

The purely technical problems of photography and the cultivation of the ability to produce perfect technical results under varying conditions interest a great many people who are not scientists or chemists, but who enjoy overcoming technical difficulties. The careful and painstaking investigation and research of the chemist and the scientist have resulted in wonderfully improved equipment and materials that have made photography vastly more comprehensive and efficient. To their efforts we owe the perfection of the modern supersensitive film with its tremendous speed and greatly increased color-sensitivity. To the enthusiastic technicians and their insistent demands for better and more efficient apparatus we owe that marvellous photographic tool, the modern anastigmat lens with its almost unbelievable speed and accuracy, and the beautifully designed and precision-built miniature cameras that make it possible to get results that used to be impossible, and, moreover, to get them with comparative ease.

Although for the pictorial photographer some of these things are not really necessary, they have helped greatly to keep up the general interest in photography.

There is a constantly increasing army of camera enthusiasts whose interest in photography is entirely in its artistic possibilities. They recognize in it a flexible and responsive medium by means of which they can express their pictorial ideas and convey impressions to others. It is for these people that this book is primarily intended, for it seems to me that in the rather overwhelming onward rush towards improvement, the artist and pictorialist have been lost in the shuffle; and it is becoming more and more difficult for the uninformed enthusiast to select from the vast multitude of materials and methods those that will be really helpful to him in his desire to interpret beauty.

The appreciation of beauty is an almost universal human attribute that is often manifested quite early in life. It may remain dormant in an adult whose interests and activities along other lines of human endeavor leave little room for unpractical and visionary enthusiasms. Frequently, however, the childish instinct develops and expands in later life, and the desire to create, the longing of the artist to produce some concrete evidence of his esthetic desires, is the logical and natural outcome of the interest in beauty that is inherent in so many of us.

An artist who uses a camera for picture making is adopting a rather difficult though absorbingly fascinating means of artistic expression.

It has been said by painters who have taken up photography that the technique of pictorial photography is far more difficult than that of painting. It certainly is more complicated and is not nearly so straightforward. The painter builds up his picture by selecting what he feels is necessary and adding little by little to the composition. He can eliminate objects that he does not want and can add what he does want, even if it is not actually there in nature, and can change the shape, size or position of any of the details. But a photographer who wants to photograph a landscape, first of all, must be lucky enough to be on the spot at a time when the prevailing conditions, the lighting, weather conditions and so on, are right or nearly right. He then has to make a negative which must have the qualities needed to enable him to make a good print from it. Then he must be able to make a print from the negative that shall reproduce some of the desirable qualities which he saw in the subject and which led him to select that subject as being suitable for picture making. He gets his final results in a rather roundabout way, and his methods of personal control are much more complicated than are those of the painter.

The painter, besides learning how to apply the paint to his canvas or paper in such a way as to create the effect he wants, must also acquire a working knowledge of pictorial arrangement—values—tones—perspective, and so on, and that is far harder to learn than the technical details of mixing and applying paint.

The pictorial photographer must learn all this too, and then, instead of just learning how to apply paint to canvas or how to manipulate pencil or charcoal, he must learn to master the use of a camera and lens and must know how to develop a negative properly and make a good print, which is really rather difficult, because the success of a photograph depends on so many interrelated factors. It is no wonder, then, that success in pictorial photography can seldom be attained except after many years of earnest application and long experience.

The impulse to express our ideas of beauty must be guided by knowledge and training, and much hard work is necessary. It is so in all branches of creative art, and photography is no exception. A musician has to put in many years of hard training before he can express himself fully, with satisfaction to himself and to others. Even so the artist in photography must work and study to make himself the master of technical difficulties, for in his hands the camera and lens should be flexible and responsive to his moods.

This does not mean, however, that the pictorial photographer must be a scientist, a mathematician and a trained chemist, for, though photography is based on exact sciences such as chemistry and optics, its use in pictorial work is entirely a matter of craftsmanship. There may well be a clear, though not necessarily exhaustive, understanding of the scientific principles that are involved in the production of a photographic print, but trained craftsmanship is the surest foundation on which success can be built. There is a tendency today for the beginner in photography to become somewhat confused by the multiplicity of gadgets and the very diverse instructions and recommendations he receives on every side, and it is often very hard for him to know what he ought to do and what he ought to use to achieve success. Let me explain, then, at the outset, that while all of the present-day apparatus and materials have a definite place in photography, many excellent films, filters, high-speed lenses, special fine-grain developers and so on, as well as many very efficient methods of developing the negative and making the print, are not applicable to the rather specialized branch of photographic practice known as pictorial photography.

Just what is useful and helpful and what methods of procedure are generally conducive to successful pictorial results will be described in these pages. This will not imply that other methods and other materials that may be indicated as being unsuitable for pictorial photography should be regarded as being of no value, but just that they are not so well suited to our particular purpose.

A film with tremendous speed, for instance, is often of great value to a newspaper photographer or to anyone who must get satisfactory exposures of moving objects in poor light, but it is very rarely necessary in pictorial work. A deep yellow, orange or red filter, used in connection with a panchromatic, red-sensitive emulsion, makes it possible to get results in certain branches of scientific photography that would otherwise be impossible, but as the use of such a filter tends to eliminate atmospheric haze and thus destroy aerial perspective, the pictorial photographer would not want to use it.

There are many excellent books and magazines which deal with various portions of the technique of photography from the practical standpoint. Therefore, when technical advice is given in these pages, it will be on the supposition that my readers already possess a thorough knowledge of the elementary principles. The reader is referred to other sources for additional information on the technical and scientific aspects of photography. My purpose is to try to point out to the artist in photography some of the universally recognized rules of composition, and to give as much practical help as is possible in dealing with a phase of artistic work in which the personal equation is so important a factor.

Learning to See Pictorially.—Of course, no book can actually teach a photographer how to make artistic pictures. All that a book can do is to point out the road and suggest lines of thought, and there must be actual experiment along the lines suggested. Pictorial composition can become a habit like many other things, and the more one works at it, the easier it will become. If the desire is there and one is interested enough to keep on trying, one's efforts must finally be crowned with success.

The would-be pictorialist must try to cultivate the ability to see pictorially. He must learn to see objects in nature, such as trees, roads, mountains, and so on, not as definite objects, but as shapes, lines and masses that have balance and rhythm and that fill the picture space in a satisfying and agreeable manner, for the object of the picture maker is to express—not actual facts—but the emotions which these facts may arouse in him. In order to be able to do this, he must understand the laws of composition and also those that affect the distribution of light and shade. His eye must be trained to distinguish textures and values, that is, the varying effect of light on objects of different material and the gradual change in color or tone of an object, according as it is nearer to or farther away from the eye. All this is a matter of study and experience, and is but the natural development of an instinctive sense of what is beautiful in line, form and tone.

In the preface to an album of his pictures Léonard Misonne, the well-known Belgian pictorialist, writes: " If I were asked what I have learned during my forty years experience as a photographer, I should reply — 'The most important thing I have learned is to observe the beautiful effects of atmosphere and light.' Many photographers are concerned only with the subject and they seek to render it as it is. Often they fail to observe that the lighting and the atmosphere adorn and transform even the most humble and commonplace objects. It is the effect that should be depicted and not the subject only. To do this successfully, the photographer should seek continually to develop his powers of observation so that he may acquire the ability to see well. These are the qualities that every successful pictorialist must possess."

There is a tendency today to depict objects more or less literally, and very often we find somewhat prosaic things photographed under such unusual lighting conditions as to make the resulting picture quite startling. I remember having seen a picture of an automobile, parked in the shadow of a fence made of horizontal slats, with the result that the car appeared to be striped with bars of light and shade. Such effects of sunlight and shadow are often very interesting. We must always remember that the lighting of our subject is really quite important because, after all, what we photograph is the light that is reflected by the various parts of the subject, and we might just as well, therefore, choose a subject that is reflecting light in an interesting way. "Semi-Lunar," Fig. 7, is an example of a somewhat uncompromising subject that made an interesting pattern because of the lighting conditions that happened to prevail at the time.

In learning to see pictorially and to interpret what he sees, the pictorial photographer must often resort to much the same methods as are used by the painter. I do not mean that he should try to make photographs that look like paintings. But when a photographer is endeavoring to make a picture which shall be an interpretation of emotions or impressions and is thus working along the same lines as a painter or any other creative artist, he sometimes finds it necessary to adopt some of the same conventions. Painters, through centuries of experience, have evolved certain symbols and certain conventions that are universally recognized by those for whom the pictures are made. Paul Lewis Anderson has said: " Making a picture may be said to be a matter of arranging certain graphic symbols in a manner which we have agreed to accept as conveying a certain meaning." A pictorial photographer who wants to speak the same language must use similar symbols. These symbols have been crystalized into a code of laws or regulations that may be referred to collectively as the principles of pictorial composition.

Let us try to find out something about composition and why it is required. Why, for instance, is it not always possible for us to photograph a beautiful scene or an interesting and picturesque object, and thus make a picture?

If we could reproduce in a picture everything that is found in a landscape just as it appears to each one of us, including the color, the depth and spaciousness, the ever varying and changing lights, the interest due to the swaying branches stirred by the wind, the sounds and scents of nature, and everything else that goes to make such a view so attractive; or if we could pick out just what appeals to us most strongly and could include in the picture only what we want to see, and leave out everything else, our reproduction might well be a picture, in all probability. But it is not possible to represent as fully as this and it is often difficult to represent selectively. At best we can only suggest, and composition is the mechanics of suggestion.

In the very early days of photography, which was only about a hundred years ago, popular interest was tremendously excited by the ability of the camera to record every object within the field of view of the lens with wonderfully realistic detail, and it was feared that painting and drawing would be superseded by this new method of making pictures. But the ability of the camera thus to depict everything in sight with such lavish prodigality is the very quality that the artist often does not appreciate, and efforts have been made all through these first hundred years of photography to control this capacity of the lens to record every detail. The artist's aim in using a camera is to make it record his impressions of facts and to express his personal feeling.

The artist in photography is handicapped to a considerable extent by the fact that the camera is, essentially, a very efficient copying machine. The optical perfection of modern lenses and the panchromatic qualities of sensitive emulsions all tend to make it even more efficient in this respect. So the artist must learn to control his medium; and knowledge, skill and experience will enable him to do this so completely that in his hands the camera may become as responsive as the brushes and pigments of the painter. Merely copying nature will rarely make a picture; there must be individual interpretation by the artist, and the camera, properly controlled, can make pictures that show this individuality very plainly.

Individuality is often shown by a preference for a certain type of subject, but it is also shown by the way in which that subject is treated. No one who is familiar with the work of the leading pictorialists would mistake a landscape by Misonne for one by

John M. Whitehead, and a figure study by Max Thorek can readily be distinguished from one by Dorothy Wilding. The individuality of the artist is interpreted by the camera and lens, and the results produced by different workers, even in the same field, are different, because each artist has used the camera to record his own impressions rather than to reproduce actual facts.

A view or a landscape will impress different people in different ways. On some people it will make no impression at all. Some people on seeing Niagara Falls for the first time will be so impressed by the grandeur and magnificence of the scene that they will say nothing; it will be beyond mere words. Others might give a casual glance and say: " Isn't it great? "

What we try to put into a landscape picture is a record of the impression which a scene made upon us at the particular time and under the peculiar circumstances of our seeing it. Naturally the impressions received will vary according to individual temperament. Each sees only what he has the capacity for seeing, and the capacity for seeing is determined by the physical condition of the eyes, by the individual's power of observation and by the personal likes and dislikes which lead one to look for certain things in preference to others.

It is really rather remarkable how unobservant many people are and how little they see except those things in which they are specially interested. A young companion of mine on a recent automobile trip was interested in trains and airplanes. He could tell on his return all about the engines he saw — the type, date, number of wheels and other details — while I did not remember having seen them at all. But I saw things he did not see; cloud formations, patterns made by trees against the sky, interesting line arrangements, misty, atmospheric effects in early morning sunlight, an intriguing line of surf along a sandy beach.

In landscape photography and outdoor work in general an effect is often transitory; an evanescent effect of light, a cloud in just the right position may sometimes lend pictorial possibilities to a subject that would otherwise be of very slight importance.

A scene will vary greatly under different conditions of season and atmosphere and we might well photograph the same scene a dozen times or more under different conditions, and all the results would be unlike.

It was Léonard Misonne, I believe, who suggested setting up a camera before any fairly interesting landscape and making a series of exposures at intervals from early morning, just as the sun is rising, through the day until sunset. Such a series of pictures under varying lighting would be most instructive. Monet painted the same corner of a courtyard at Hampton Court several times, at various seasons of the year and under varying atmospheric conditions, and made several entirely different pictures. What we represent in an outdoor picture, therefore, is just one aspect of the subject as it happens to exist at the chosen time. We make our representation individual by emphasizing those aspects of the subject which give us the impressions which we desire to convey, and by subduing or eliminating anything that may be antagonistic to these impressions. Any work of art, whether it is a painting or a photograph, is, at best, only an abstract interpretation of actual facts. Nature gives us the subject from which we select what we want; of what we select we emphasize part, or eliminate part; and composition teaches us the practical and commonsense methods of selecting, emphasizing and eliminating.

The Mechanics of Suggestion.—What we can do in the way of actual representation is really very limited. A photograph of a landscape scene is very largely a matter of suggestion for, to begin with, we can suggest color in a monochrome print only by getting the tones and values approximately correct, and in most of the photographic printing processes by which we make a positive print on paper we have only a comparatively few gradations of tone, ranging at the extreme from white paper to a deposit of silver or pigment, which is a very poor substitute for the infinitely longer range of tones in nature. So we must be careful how we use these gradations and must economize and make them go as far as possible. Composition will help us to do this. With the aid of composition we can convey impressions, and these impressions will be more clearly and more convincingly conveyed if we make intelligent use of the mechanics of suggestion — the recognized formulas known as the principles of pictorial composition.

This applies in making figure studies and portraits as well as in making outdoor pictures. We have all seen, I am sure, a snapshot or even a technically excellent professional portrait of a familiar friend, in which he is represented in a way that is quite unfamiliar to us and is far from characteristic, so that the picture fails to convey the right impression. This is usually the result of poor selection both of the point of view and of the right instant in which to make the exposure. The good points of the subject were not emphasized, nor were the undesirable features subdued or eliminated, and therefore the resulting print fails to be a successful picture. We have to be just as careful in selecting the right conditions under which to photograph a landscape as when photographing a human subject, and here again the principles of composition will help us by teaching us what to look for and by guiding us in the selection of the most favorable point of view, the best conditions of lighting and so on. Composition, then, is the exercise of the power of selection.

The late H. Snowden Ward once said that " a picture should convey a mood, rather than impart local information," and a clever and competent artist can often make a picture that will be so characteristic of one particular mood of nature that others will be able to recognize it. The artist does this by emphasis, by elimination, and by suggestion; and a knowledge of composition will tell him what to emphasize, what to eliminate and how to suggest.

Possibly it is not strictly correct to speak of a "mood" of nature because the word mood presupposes some intelligence and volition, but the sea, for instance, under varying conditions, suggests different moods, calm and quiescent, or lashed to fury. A landscape may also be said to have moods, and may thus give rise to different sensations and impressions. It may convey an impression of beauty; its grandeur may inspire awe; it may suggest melancholy or gloomy ideas, or may give an impression of peacefulness, calm and quiet; perhaps solitude may be suggested, or desolation. It is impressions and sensations such as these that we desire to convey in our pictures. We want to suggest the mood of the landscape, just as we suggest the moods and characteristics of human subjects, and we go about it in much the same way, by emphasizing, eliminating and suggesting, which we are enabled to do clearly and convincingly by means of a knowledge of the principles of pictorial composition.

We must try to make sure, first of all, just what it is that appeals to us in looking at a certain view or landscape; we must try to analyze our impressions, and find out what the prevailing characteristic is. This will give us some idea of what to emphasize and what to subdue or eliminate, so that we can make our impressions clear to others. Composition, then, is appropriate action following a careful analysis of impressions.

Let us see how this works out in actual practice. In viewing the scene before taking the picture, "An English Lane," reproduced as Fig. 1, the impressions I had were those of space, freedom and plenty of open air, and they were what I wanted to suggest in the picture. The appropriate action, it seemed to me, was to leave a good deal of sky above the horizon and to keep the horizon rather low in the picture space. This picture was made a good many years ago and it is interesting to find that in a more recent picture, "Florida Beach," Fig. 2, the impression to be conveyed was again one of tremendous space, unlimited height, and grandeur of sea and sky, and again, quite spontaneously, the horizon was placed very low to give plenty of room for the sky, and, in order to give an even more convincing suggestion of wide open spaces, the comparatively tiny figures were included to give scale.

This use of a human figure to emphasize the height of surrounding objects is seen again in "Running In to See Mr. Lincoln," Fig. 3, where the little figure is contrasted with the columns that surround the Lincoln Memorial in Washington.

Composition is very largely common sense. Such methods of emphasis as those just referred to are quite obvious and would quite readily suggest themselves to anybody. The appropriate action will usually be easily discovered as soon as we have analyzed our impressions and have made up our minds just what we want to suggest in the picture.

Thus by some such means as those just outlined it is possible to make a picture deliver a message and convey to others the thoughts and feelings that were experienced and that provided the impulse to use the selected material in a particular way. This is one aspect of pictorial composition; knowing what to select, how to arrange, what to emphasize or eliminate, and how to do it.

A straightforward, uncontrolled photographic representation of a scene usually has only a rather limited interest, which is often purely topographical, but if it suggests an emotion or conveys an impression instead of merely imparting local information, it thereby acquires pictorial interest.

Lack of color is often a source of disappointment in photographs. In many outdoor subjects it is the color that is attractive, and we find, when we photograph such a subject on an ordinary film that does not reproduce the actual colors, that it loses much of its charm. A very colorful sunset sky is usually a subject that can be rendered adequately only by one of the natural color processes. In monotone photography we must look for qualities in the subject that can be transferred to our picture, such as balance of line and mass, pleasing gradations and tonal values, and composition will teach us what to look for and how to transfer it.

Suitability of Subject. — There are certain types of pictures, certain classes of subjects, for which photography is particularly well adapted. Because it is possible in photography to get the image on the sensitive emulsion in a very tiny fraction of a second, it seems to me that photography is specially well suited to the recording of a fleeting and transitory effect — the crash of a breaking wave on rocks, the interesting wavy lines of reflections of objects in slightly disturbed water, the momentary expression on a child's face. All such things as these can be rendered by photography with a spontaneity and truthfulness that is almost impossible in many other media. When a painter wants to portray such subjects, he has to rely on memory and imagination to a very considerable extent, because the actual effect is of such short duration that it is impossible for him to copy it exactly.

Then, too, a subject that depends for its effectiveness on a vivid reproduction of surface textures can be handled very beautifully by photography, for, just as every different musical instrument has its own characteristic virtues and limitations, so does every different means of pictorial representation have qualities that differentiate it from others. Oil and water-color painting each have individual and distinctly different qualities; one is rich and oily, the other delicate and luminous. A wash drawing has qualities that differentiate it from a pencil or charcoal sketch. Each different medium is recognized as having some special quality that makes it appropriate for certain types of subjects. A delicate, high-key landscape or seascape, with light, fleecy clouds floating in a blue sky, is a type of subject that is admirably well adapted to water color. Etching always seems to me to be an excellent medium for architectural subjects — a Gothic cathedral or a detail of an old-world building — for anything, in fact, in which line is an important quality. The rich opulence of oil painting is often very valuable in a still-life study in which it is desired to include a long range of tonal values with full detail in the deep shadows. In portraiture, too, the medium that is used can impart a quality to the picture that is in accordance with its inherent qualities; delicate, airy lightness, graceful and expressive lines or a warm, rich mellowness. Because of its ability to reproduce all the delicate and subtle gradations of reflected light on the surfaces of any object so that it can render surface textures with a vividness and beauty that is sometimes startlingly realistic, photography is a splendid medium for the modern type of realism.

Composition in picture making is, then, a matter of common sense. In making pictures we are dealing with impressions rather than with concrete facts. Composition is the application of common sense, with a due regard for the teachings of experience, to finding the best means of making our impressions clear to others. Composition, too, is largely a matter of instinct; the photographer will often be led to yield to an impulse and to arrange his pictorial material in a certain way just because he feels that it is right to do so, although he may not always stop to reason it out. This psychic quality in the artist is something that is well worth heeding, but such an instinct for composition will be more to be depended upon if it is backed up by a knowledge of the universally recognized rules and principles of pictorial composition which will be enumerated, explained and illustrated in the following chapters.

The would-be picture maker must learn to think pictorially; he must try to regard a picture as a pattern, as an arrangement of lines and shapes, making in themselves a pleasing and satisfying design, quite apart from the objects represented. The lines will form certain shapes, and the shapes will vary in tone; some may be light, some dark and some of intermediate shades of gray, which we call halftones. He must try to disregard the actual subject of the picture to some extent. He must think of it as a series of shapes and masses of varying tone, from which he can select and arrange the material to fill the picture space, so that the result will be pleasing in design and the space will be adequately filled. He must not take it for granted that because he is photographing a beautiful view or a handsome person his result will necessarily be pictorial. It may be, or it may not. That depends entirely upon the photographer, because he has the power to control his results and to make his interpretation individual rather than mechanical. If all photographic representation were pictorial, nearly every photograph would be a picture; for no one would deliberately select an ugly object to photograph if the beauty of the picture depended upon the beauty of the objects in it. That this is not the case may, I think, be proved by calling to mind pictures which are beautiful, although they are representations of quite ordinary and, in some cases, even commonplace or ugly objects.

To select a homely and quite undistinguished object and portray it literally and truthfully and with uncompromising realism offers tremendous possibilities for the pictorial photographer. When the photographer has the insight and the skill to make his picture tell more than is obvious, and is able to penetrate beneath external realities, the result may be unquestionably a work of fine art.

It is interesting to find that the old-time photographs of Paris made by Eugen Atget have now considerable historical value just because they have this very quality of depicting more than surface realities, though it is very probable that the maker of them did not regard them as being anything more than records of commonplace scenes. It is a pity there are not many more competent photographers making such valuable records of rapidly vanishing American scenes, as this is a type of work for which the camera is preeminently adapted.

There is plenty of scope, too, in such pictures to get far more than mere technical perfection, for by applying some of the suggestions that have been made; by choosing a point of view from which you can get masses of tone that are interesting in shape and arrangement, so that they make a pleasing pattern that fills the picture space adequately, the result may be far more than a mere technical stunt. Many such pictures are hung in representative salons and they are decidedly worth while. The success of a picture does not depend upon the beauty of the subject, but, to a very considerable extent, upon the manner in which the picture maker uses his pictorial material.

To repeat, the first thing the picture maker has to do is to learn to think in terms of line, mass and tone; he should regard the subject, not as any specific object or several objects that he is to photograph, but as material with which he is to compose his picture so that the lines are decorative and pleasing and so that the shapes of the masses bounded by these lines are interesting in form and tone. The very word composition, defined as " the act of composing; putting together; arranging in proper order," implies that the picture maker must do something besides setting up his camera and letting it photograph just what happens to be before it.

In portraiture, genre pictures or figure studies, and in still-life pictures, flower studies, etc., the photographer can actually arrange and put together the component parts of his picture; he can select what he wants and arrange it as he thinks best, and therefore the composition is largely under his control. This is constructive composition. There is another kind of composition, called selective composition, which is applied to such pictures as depend for their arrangement upon selection both of the subject and of the point of view. Landscape pictures and marine studies come under the head of selective composition, because in such pictures the photographer cannot actually arrange his material. He has to take what exists, and arrange his lines and masses by selecting, whenever possible, a viewpoint from which good composition can be secured.

Modernism.—There is a tendency today to disregard the principles of academic pictorial composition and to consider that any arrangement of the picture material at all is good composition if the artist likes it that way. The aim of the modern pictorialist seems to be to arrange the subject matter in just exactly the opposite way from what would have been done by the academician, and there is some indication that he probably does know something about composition when he sets out deliberately to disregard it.

If the artist is sincere and really feels that his way is the best, then it is perfectly right for him to do things in his way, but, though some slight headway has been made with simplified spelling, we still — with the possible exception of a few modern poets — adhere to many of the very old and long-used rules of grammar and syntax in order to make ourselves understood when we speak or write. So it seems perfectly reasonable to continue to observe the well-tried principles of composition in picture making when we want to convey a message by means of a picture.

In music there is much the same tendency to disregard harmony and counterpoint and to substitute a childish and rather irritating tom-tom rhythm which is claimed to have a wonderfully stimulating effect. Possibly it would have that effect on the natives in the wilds of Africa, but hardly on those whose appreciation of music is a little more advanced.

There are always those among us who constantly desire experiences as different as possible from those with which they are familiar, and such desires often find an outlet in some form of art. So, if you really prefer a picture of the postman with pea-green whiskers, you are in quite distinguished company, because there are many who profess to like deliberate distortions of form and color.

There are indications, however, that some of the fads and eccentricities in present-day pictorial photography are being allowed to die out and will soon be as extinct as the " sprezzochuro," a cult started in the Middle Ages by a group of inefficient painters who decided that they knew more than Michelangelo, Leonardo da Vinci and other contemporary artists and started an entirely novel style of painting of their own.

The craving for variety is a sign of progress and it shows that the art of photography, which is, after all, a comparative newcomer among the fine arts, is becoming firmly established as an economic necessity.

Modernism in photography is a much-discussed subject but there still seems to be a good deal of uncertainty about it. Some very interesting results have been produced; some unexpectedly beautiful patterns and decorations have been discovered in bisected cabbages and other unpretentious objects. Grotesque foreshortening, unusual viewpoints, relentless realism have all been used with startling effect, but, after all, the discovery that a lens can reproduce detail and surface textures with extreme fidelity is not a new discovery, but is something that has always been the aim of lens manufacturers. Nevertheless, there are some who are getting so excited about it that they are discarding everything in favor of what they describe as " realism," which merely means that the accumulated experience of generations of artists is being scrapped in favor of literal reproduction of forms and surface textures. Such a conception of photography seems to be that of the commercial photographer rather than of the pictorialist. Exquisite technical photographs are being made every day by commercial photographers all over the world, but they are not being hung in salons, yet there are a number of pictorialists who are exhibiting pictures that would serve very well — in spite of or perhaps because of their studied eccentricity — as illustrations in a manufacturer's catalogue.

When H. Snowden Ward defined a picture as "a thing beautifully photographed, rather than a beautiful thing photographed " he probably did not realize what that idea would lead to; that the disregard of the subject would be carried to such an extreme and that the quest for the unusual and the ridiculous would attain to such proportions. It is good fun, to be sure, but it is hard to see how it fits in with pictorial photography. In commercial work, as in making photographs for advertising purposes, it may be necessary to make a startling picture that will readily attract the eye, but such pictures hardly belong in a salon.

Close-ups and enlargements of a small portion of the negative are being carried to ludicrous extremes. Faces enlarged so much that they are crowded out of the picture space, buildings slanting obliquely across the picture, gas tanks, oil tanks, factory chimneys, bits of machinery and other odds and ends hardly deserve the importance that is being thrust upon them. As advertising designs or catalogue illustrations such pictures would be very effective, but it does not seem to me that they are worthy of recognition as examples of pictorial photography. They are interesting stunts and, as such, they are accomplishing a worthwhile purpose in that they are making it necessary for the photographer to possess a thorough mastery of photographic technique.

The technical skill that is needed to produce such pictures as these should be acquired by the pictorialist, for then he will be sufficiently master of his medium to be able to concentrate on other equally important qualities that are demanded in a successful exhibition picture.

There are a number of well-known instances of much time and trouble having been spent by photographers in mastering technique by photographing some simple object, such as an egg, a great many times, until the result really shows the peculiar texture and quality of the object photographed. When Alfred Stieglitz was studying photography under Professor Vogel in Berlin he photographed an architectural detail in his garden many, many times before he rendered the textures and values of white marble in full sunlight to the complete satisfaction of his teacher.

The technique of photography is something that must be acquired by practice and application in just the same way as the mastery of a musical instrument. The user of a camera who wants nothing more than records of scenes, places and people and who is not at all interested in the pictorial qualities of his results can have his photographs developed and printed for him by a commercial finisher, but the pictorialist must do this himself, for he will find that if his pictures are to show any individuality and are to " convey a mood rather than impart local information," the process must be carefully controlled and guided at every step.

CHAPTER II

Pictorial Composition in Principle

FOR the benefit of those who prefer to have a basic understanding of academic composition as it has been applied in picture making through the ages, it might be helpful to point out some of the generally accepted ideas about spacing, masses, lines, tonal values and relationships, concentration of interest, balance, harmony, variety and simplicity. As we have already seen, there are practical and rational methods by means of which we can suggest emotions and impressions and thus make our pictures interesting. They are simply the obvious and common sense methods that govern the mechanics of suggestion. These laws and principles are quite definite and should be thoroughly understood, but their application in practical picture making must be guided by circumstances. Sometimes the laws may be modified and adapted to the occasion, but they cannot be entirely disregarded, for it will be found, when good taste and critical judgment have been developed by practical experience, that a bad line, a false tone or a lack of balance in a picture will be as noticeable to the cultivated eye as a false note would be to the trained ear of a musician.

Spacing.—The simplest possible conception of a picture is an arrangement of lines cutting into a rectangular space in such a way as to make it interesting. It may be a conventional pattern or design, bounded by the edges of the picture space, or it may be a representation of an object or a scene in nature.

When the picture space, instead of being blank and empty, has been cut into areas of varying shapes and sizes, our interest is at once aroused, and whether the shapes and areas represent natural objects or whether they form merely a conventional pattern, we have the elements of decoration.

If we take a rectangular blank space and cut it by a series of lines, we get a pattern which may be simple or complex according to the number and direction of the lines. On the disposition of the lines in a picture, and on the arrangement of the masses or areas of tone, depends the success of the result. The effective ways of dividing the picture space by lines and masses are probably innumerable. The finest effects often present themselves as happy surprises. Rules and suggestions must necessarily be largely in the nature of what to avoid.

A very regular arrangement or pattern will probably be less interesting than one in which the various parts differ in size and shape. In music and poetry a very simple and commonplace rhythm or meter is apt to become monotonous and even irritating in just the same way as a very regular, all-over pattern in a picture is sometimes monotonous and is far less exciting than what might be described as an unexpected pattern.

A rectangular space exactly bisected by a straight horizontal line is less interesting than a similar space divided by a horizontal line above or below the exact center, making two spaces of unequal size. When a vertical line is added, cutting the rectangular space in another direction, the interest is greatly augmented.

This cutting of the picture space into varying shapes or areas, some of which may be light and some dark in tone, is called spacing. The areas of tone are called masses and, whatever the subject of the picture may be, its success as a picture depends very largely on the effectiveness of the spacing and massing.

The edges or boundaries of the picture space play an important part in the arrangement of lines and areas within the boundaries and are, therefore, important factors in the disposing of forms and masses.

Massing.—The masses, together with spacing, govern, to a great extent, the pattern or design of the picture. It is the important masses that we see when we look at a picture through half-closed eyes, which is often done with the idea of eliminating detail, so that we can more clearly appreciate the pattern. If the masses are good, and form, in themselves, a pleasing and satisfying design, we may be sure that the composition, as far as masses are concerned, is satisfactory.

The massing of a picture is what we first notice. If it interests us at a first glance, it makes us anxious to investigate further and give the picture more careful inspection. The masses are what attract attention when looking at a picture from a distance, too far off to be able to distinguish details or even, perhaps, to make out just what the subject of the picture may be. It is interesting, when we go into an exhibition room where there are paintings or photographs, to stand in the middle of the room, glancing around casually at the pictures. Those with strong and interesting masses will stand out from the rest; they will attract attention and create a desire for closer study. Good masses will give a favorable first impression.

The desire to attract attention and make the picture noticeable, so that it will stand out among others, is often shown by making the picture very large and by placing it on a large mount, but, as a matter of fact, good masses and an attractive pattern are not in any way dependent upon size, and mere size will not make a picture attractive unless the masses are good and are well balanced. Even a small picture may be very strong, and may stand out among larger ones, if the masses are striking and attractive. The strength of masses depends upon their own inherent qualities rather than upon their size, and they gain in strength and effectiveness by being very simple and by forming a simple, yet pleasing, design.

This aspect of the subject, regarding a picture as a pattern or design rather than as a representation of an object or objects, explains why an artist finds it necessary to select and arrange, and is not always content to take a fragment of nature and transfer it to his picture. The artist often has to select and arrange in order to make the lines and shapes and space relations conform to his taste and his appreciation of a satisfying pattern. Thus he gets effectiveness and pictorial interest, as distinguished from mere map work or the scientific exhibition of details.

In order to be able to select and arrange we must learn to see things in terms of lines, shapes and masses, and this will enable us to determine from what point of view to photograph the subject, if it be a scene in nature, so that its lines and masses will form fine, or at least agreeable, space divisions.

This brings us again to the difference between drawing or painting and photography. The painter can build up his picture as he goes along, for he begins with a blank space which he fills as he works. In so doing he often finds it desirable to alter the shape or position of objects and adapt them to suit his purpose. He emphasizes some things and eliminates others, and his final picture contains only those elements of the scene or view which he considered essential to suggest the impressions that he received from that particular scene or view.

In conveying impressions, an artist makes use of the physiological and instinctive suggestions that are conveyed by the expression of lines and the shapes of masses, by modulations of tone and by the pleasing sensations produced by the harmony and balance of the different elements of ~~the~~ picture.

The pictorial photographer also very often needs to simplify his picture and to arrange and compose the lines and masses, and he therefore has to be very careful in selecting the right point of view and in choosing carefully the right conditions of lighting and atmosphere to give the desired effect.

F. C. Tilney in " The Lure of the Fine Arts " emphasizes this point. He writes: "All landscapes of the old school were carefully composed in order to make them good as pictures in addition to being good as records of natural phenomena. The camera has brought negligence in this matter by its haphazard examples to which we have grown accustomed. But landscapes require to be schemed and designed quite as much as do figure compositions. Even where an almost literal copy of an actual scene seems to be good enough, there is always some little adjustment to be made in the disposition of things, and skies have to harmonize in their cloud shapes with the lines of the land objects. Further, it is imperative that the arrangement of tones shall conduce to a satisfactory chiaroscuro."

It is just this that makes the bromoil process so fascinating and so eminently satisfying in the hands of one who has the necessary knowledge and skill to take advantage of its possibilities. After bleaching the enlargement and preparing it for pigmenting, the sheet of paper is practically blank and the artist has nothing to distract him — nothing but his recollection of the print before it was bleached out — and he can build it up very largely according to his own idea of what he wants. The possibilities of control in the bromoil process are very great. It is a fairly simple matter to make the "little adjustments in the disposition of things" that are often necessary, and it is possible, though a good deal harder, to create cloud shapes that harmonize with the lines of the land objects. The necessary manual dexterity to do this is something that may be acquired with a little practice, but it takes years of careful study and patient observation in order to understand the anatomy of clouds and to make them look like real clouds instead of lumps of cotton batting. The tremendous possibilities of control in the bromoil process make it a very satisfying process in the hands of an expert and, at the same time, a rather dangerous process and one that is liable to lead to disastrous results.

In order to make "the arrangement of tones conduce to a satisfactory chiaroscuro " the pictorial photographer must put in many years of careful observation and study of tone values under all kinds of varying atmospheric conditions. Reflections in water, the values in the middle distance and in the distant planes of a landscape and all such things must be carefully studied and an effort must be made to reproduce them as correctly as possible by using suitable sensitive material and by giving adequate exposure and proper development.

Lines. — The lines in a picture are of great importance in giving interest, and the sensations that may be conveyed by lines alone are many and varied. The lines not only determine the harmony of the parts, by fixing the relation of spaces and the forms of masses, but, by their direction, give the characteristic impressions of repose or agitation, gaiety or gloom, peace, grandeur, etc. The subject of the picture will not express its sentiment truly and adequately unless it is made to do so by the language of lines.

Lines have expression, and by the use of lines alone we can suggest impressions. The expression of horizontal lines is that of repose and restfulness; the horizontal lines of the calm ocean or the long low clouds of a sunset sky are examples of this. Long horizontal lines must be used sparingly and carefully in pictures, because such lines, with the possible exception of the horizon line of the ocean, act as barriers to the vision in going into the picture, and thus a level line continuing entirely across the picture would tend to separate the parts. Such lines may well be broken by vertical or oblique lines.

A vertical line suggests dignity, strength and stability, typifying man, the only animal that stands upright. Very long vertical lines suggest grandeur and sublimity; the spires of a cathedral or tall pine trees convey such impressions as these in a picture.

Oblique lines suggest action and energy; they are lines of motion and lead the eye in the direction which they take from the base line of the picture. The lines which would exist in a picture of a person running, seen from the side, would be mostly oblique lines leading the eye in the direction in which he is going. Oblique lines can be balanced and their energy reduced by the opposition of lines inclined the other way.

That certain lines are more pleasing than others is well known, though the reason for this is not so commonly recognized. It is partly physiological, and partly due to the possibility of suggesting emotions by means of lines. From the physiological standpoint, an oblique or a curved line is more pleasing than an uninterrupted straight line, either horizontal or vertical, simply because the eye can follow the course of such a line more easily and with less muscular fatigue. To follow closely an uninterrupted horizontal or vertical line puts undue strain on a part of the muscular system of the eye, and the muscles used in this way easily become fatigued, whereas, in following the course of a curve or an oblique line, all the eye muscles are used and no one particular set of them is overworked.

This explains from an anatomical and practical point of view why it should be regarded as a rule of composition that curves or oblique lines are more desirable in a picture than a single straight horizontal or vertical line, and this leads to another consideration in composition: variety of line.

By means of variety in the lines of a picture, the muscular effort in viewing it is rendered less fatiguing. The concentrated effort that is needed to follow carefully the course of a single horizontal or vertical line is tiring, because only a few of the eye muscles are used, but variety is restful because it exercises, without tiring, the whole muscular system of the eye.

A picture may well contain a number of horizontal lines or a number of vertical lines, all slightly different in length, such as might be found in a wood interior or in a picture of shipping with a number of vertical masts. This might be restful and pleasing, because the eye would not concentrate on any one single line, but would shift from line to line, noting, perhaps unconsciously, slight variations in length and direction. If into a picture containing a number of vertical lines, such as those suggested, there can be introduced naturally some strongly opposing line, horizontal or oblique, the variety thus obtained will be physiologically restful and pleasing, and will help toward good composition. All this goes to show that composition, fundamentally, is based on good common sense and is governed by distinctly practical laws.

Variety, ~~then~~; is a valuable quality in a picture and can be secured by introducing opposing lines, varying in direction.

One of the most pleasingly varied arrangements of straight lines is given by the triangle. Almost any triangular formation of lines, with the possible exception of a very exact right-angled triangle, would be a good arrangement in a picture, because it would satisfy the physiological craving for variety. A very noticeable and exact right angle is not good, because it combines the physiological difficulties of the single horizontal and vertical lines. The effort required to turn abruptly from the vertical to the horizontal, bringing into play a different set of eye muscles, may be rather disturbing. A triangle suggests solidity and firmness; it is a form which embodies physical stability. It is also a good space filler, for its outlines tend to suggest other triangular shapes in conjunction with the edges of the picture.

When two lines form an acute angle it is easy to follow them both at once, and the gradual approach of the lines near the angle gives early notice to the eye of the coming reversal of direction. The sharp effort of muscular performance in reversing the direction conveys an impression of energy and action. That is why the spires of a cathedral, for instance, or tall, pointed pine trees, which form acute angles, are interesting and artistically satisfying.

When the angle formed by oblique lines is obtuse, the muscular change from one direction to the other at the angle is per-formed slowly and easily, not as sharply or as completely as at an acute angle, and this gives an impression of easy, restful monotony, rather than of energy and activity. The valleys between low hills are often in the form of obtuse angles, and seem restful and peaceful when represented in a picture.

Such impressions as these, induced merely by the direction of the leading lines, are very definite, though, often, our sense of them is instinctive, because we do not stop to reason the matter out. Nevertheless the impressions are definite enough and important enough for us to make practical use of them in composing or selecting the subject of the picture.

We can make one impression counteract another, and too many lines in one direction can be opposed and balanced by introducing lines in another direction. That is why a triangular arrangement is usually so satisfactory, because we get interest and variety in the lines, and one balances another.

In discussing lines, so far, we have referred only to straight lines, and have noted the impressions conveyed and the emotions suggested by such lines varying in direction. When we consider curved lines as well, we shall find that the possibilities are very much increased. A curved line, as a rule, will convey an impression of beauty more strongly than a straight line; a curve can be vastly more satisfying and pleasing than a tangent.

From the purely physiological standpoint, a curved line is necessarily more soothing and restful, because, in following the course of a curved line, the different eye muscles are alternately at work and in repose, and, therefore, there is little strain or fatigue.

Probably the most completely satisfying curved line is the S-shaped curve which is known as Hogarth's " line of beauty." This line, in one of its many varieties, is often found in nature, as in the sinuous windings of a stream or river or the outlines of a mountain range, and it is exemplified very frequently in the lines of the human figure. It is interesting to note how frequently this line is found in pictures, even when it is not noticed at the time of making the exposure.

The S-shaped line contains the gist of balance and the essence of grace. It may be compared to a tongue of flame that winds and curves and stretches upwards. The S-curve is also found in a more angular form, more like the letter Z. This, too, is a good line. Both the S and the Z are excellent space fillers; one is the embodiment of grace, the other of energy. The introduction of such a line will usually give beauty and interest to a picture. A single curve alone is often beautiful, but the S-shaped curve is still more beautiful because of its variety and change in direction. Curved lines must be used sparingly, for a picture made up entirely of curves would be weak and flabby. Such lines require the association of straight lines to develop their full beauty.

So far, in dealing with lines, we have considered only actual, structural lines, outlines of objects or edges of tones, but there is another kind of line which plays an important part in picture making of all kinds. This is the line which is not actually expressed, but which is, nevertheless, very strongly felt; the line by which the eye will instinctively connect prominent objects, following the shortest route between two points, for the eye will always take the shortest path. As an example of this powerfully felt, yet wholly imaginary, line, we may consider the face and hands in the portrait of a person dressed in dark clothing, and posed against a dark background, so that the face and hands are the only light accents in the picture. We shall find that the eye will instinctively and instantly connect these three light spots, and we shall almost see a line going from one to the other. This often gives a suggestion of a triangular line arrangement, and the influence of the unseen line may be utilized with advantage in forming a good line arrangement in portraits and figure studies.

In landscape work such a suggested line may frequently be used with good effect. The tops of a row of trees may suggest a line. A number of boats, small objects or figures in a landscape may be so grouped that a line connecting them will be pleasing and important in the composition of the picture.

Natural objects, plants and flowers all exemplify this suggested line to a marked degree. The eye notes at once that a circle will touch the extended petals of a sunflower, and that the outer points of the compound leaf of the white ash would lie on an ellipse. It is the powerful influence of these imaginary lines which makes the proper placing of accents so important in pictures. Even the smallest objects, such as birds flying in the air, or pebbles or rocks on the seashore, might influence the direction of such a line. The roofs of distant buildings, the heads of a group of people, innumerable apparently unimportant objects, must be considered with regard to this influence.

Balance. — As a general rule, if there is one important object of interest in a picture, it should not be located exactly in the center, for then there will be no balance; the eye will rest on this central object and will get no relief. Balance implies two forces acting on a fulcrum, and Henry R. Poore, in his well-known book, "Pictorial Composition and the Critical Judgment of Pictures," compares pictorial balance with the mechanical balance of the steelyard, where a heavy load on the short arm balances a lighter load on the longer arm. This is a perfectly practical and convincing mechanical principle.

Therefore, it is often a good plan to introduce into the picture space some other item of subordinate interest in order that the eye may get relief by passing from this main object of interest to a secondary object and then back, in various directions, to the principal object. Then, too, it follows that if we use the steelyard idea of balance, the center of the picture would be where we imagine the fulcrum of the steelyard to be, and, in accordance with this principle, an important and heavy object near the fulcrum can be balanced by a smaller and less important object on the longer arm of the steelyard, that is to say, farther from the center. Such mechanical balance gives a perfectly satisfactory pictorial balance.

An object located exactly in the center of the picture cannot be balanced by any other object at any distance from the center. It must stand alone. So there are very few objects that have sufficient importance to occupy the center of a picture.

In many of the old religious paintings of such a subject as the Crucifixion, the figure of the Christ was generally placed in the exact center, for it was of such tremendous importance that it could adequately fill that position and could hardly be placed anywhere else, so in "Is It Nothing to You?" Fig. 10, the only possible arrangement was to place the crucifix exactly in the middle.

The main object of interest in a picture can be made evident by lines leading to it, or by being prominent in tone, that is to say, by being distinctly lighter or darker in tone than other parts of the picture. Sometimes the important object in a picture is strongly emphasized by placing a light tone and a dark tone close together. In a well-composed picture the eye should at once be strongly attracted to some spot of predominating interest, but should be able to get relaxation and relief by passing on to other, less important, points. If there is in the picture another object or point of equal importance, the balance will be destroyed, because there will be competition instead of harmony, and the eye will jump from one object to the other in the effort to decide which is really the stronger.

On the principle of the steelyard, only a very small and comparatively unimportant object is needed, at a distance from the fulcrum, to balance a large and important object nearer this point. Too many lines and too many objects of equal importance in a picture will cause confusion, discomfort and eye-strain. Sunlight seen through foliage, for instance, making a number of bright spots, is irritating and uncomfortable, and is, therefore, not conducive to good composition. A landscape picture showing two roads or paths of equal or nearly equal importance, branching off in different directions, would not be a well-composed picture. The usual remedy in such a case is to cut the picture in two, giving a road to each part.

Notan. — To describe the pattern or decorative aspect created by the disposition of the masses of a picture, Arthur Dow suggests the word "notan," which is a term used by the Japanese to signify an arrangement of light and dark. In his book, "Composition," he writes: "To attain an appreciation of notan, and the power to create it, the following fundamental fact must be understood, namely, that a placing together of masses of light and dark, synthetically related, conveys to the eye an impression of beauty entirely independent of meaning. For example, squares of dark porphyry against squares of light marble, checks in printed cloth, and the blotty ink sketches by the Venetians, the Dutch and the Japanese. When this occurs accidentally in nature, as in the case of a grove of dark trees against a light hillside, or a pile of dark buildings against a twilight sky, we at once perceive its beauty, and say that the scene is 'picturesque.' This quality which makes the natural scene a good subject for a picture, is analogous to music. Truthful drawing and 'conscientiousness' would have nothing to do with an artist's rendering of this. This is the kind of 'visual music' which the Japanese so love in the rough ink painting of their old masters where there is but a mere hint of facts."

Notan determines the pictorial balance of a picture, not so much the mechanical steelyard balance of objects or accents, as balance in a larger aspect, the balance of design. ~~For~~ the pattern of a picture, to be agreeable, must be well balanced; it must not be top-heavy, or too large or too small for the space it fills. Whether or not the pattern is well balanced can be decided only by cultivated good taste and judgment. Many rather startling modernistic pictures are good examples of bold and effective massing and it is evident that the makers of them have a keen appreciation of notan and a feeling for decorative line.

The picture space should be filled, but need not be crowded, and it must be remembered that in judging balance, not only the masses of the subject, but also the shapes of the area remaining after being cut into by the outlines of these masses, have a bearing on the general design of the picture.

A mass may be light or dark in tone. Sometimes the striking masses are in light tones against dark. A nude figure or one dressed in white might form a light mass against a dark background.

Suppression of Detail.—In order properly to appreciate masses it is sometimes necessary to eliminate some of the fine detail in the picture, for a very highly corrected lens often will give too much detail. In such elaboration of detail the pattern of the picture is obscured, the bigness and impressiveness of it are lost. When we look at a tree, we cannot and do not want to distinguish all the leaves in sight or take in at a glance the labyrinth of boughs and twigs. We would rather have the twigs and branches compose into a general character of structure and direction, and the foliage into a mass or arrangement of masses.

There are various methods of subduing detail in a photograph. It can be done by using one of the many available texture screens, such as the Halie "bromoil screen," "etching screen," "linen screen" and others of a similar nature. These screens usually consist of a piece of more or less transparent celluloid variously grained. The piece of celluloid is placed in contact with the sensitive paper and the exposure is made through it.

Another popular method of subduing detail and getting an interesting texture in the picture is to reverse both the negative and the paper, placing the paper with the sensitive side facing the easel, and make the exposure through the paper. Or you can use a piece of thin paper in contact with the sensitive sheet and expose through it to get a characteristic paper texture in the print. Then there are various diffusing discs and screens such as the Eastman diffusion disc and the very popular Misonne "Soft-Sharp" screen, by means of which varying degrees of diffusion may be secured. This Misonne screen may be used during the entire period of the exposure or for only a part of it.

Probably one reason why a good bromoil or a print by any similar process is usually more attractive than a straight enlargement is because the slight softening of the edges and outlines, and the fact that the tones are composed of pigment applied *on the surface* instead of being embedded in the gelatin, gives the picture a breadth and carrying power that is most attractive.

A very interesting way to get breadth in a photograph is by the use of a semiachromatic or soft-focus lens. The proper use of such a lens will not destroy or obliterate detail, but will render it in such a way that it will take its proper place in the general scheme of the picture and not be too insistent. With a soft-focus lens properly used, a tree can be rendered as a decorative shape or mass instead of as a collection of innumerable leaves, twigs and branches; the texture of the bark and foliage (like the texture of clothing, etc., in figure studies) can be adequately suggested, and the eye will not be distracted from the harmony of the picture as a whole by the insistent clamoring of fine detail for microscopic examination. This massing of fine detail will impart to a picture the much desired quality known as "breadth." We can have some detail in the masses and still retain breadth, provided the detail is properly subdued and does not attract undue attention.

With such a lens one can suggest the vibrant quality of sunlight and render the transparent luminosity of shadows better, I think, than by any other means. The lack of hard edges and the entire absence of that biting hardness of definition that is unavoidable with some lenses is just what the picture maker wants. That is, in fact, just what he is striving for when he makes his enlargements through coarse cloth, or prints on a paper with a very rough surface. Such methods can, at best, be regarded only as attempts to make the best of a bad job, and if we can get the desired quality in the original negative, it is far better. But it should be real quality, not merely softness. There is no artistic virtue in the mere obtaining of soft, hazy and uncertain definition. A picture is not necessarily a picture because it is blurred and fuzzy, though it may possibly be a good picture in spite of it.

Of course the method to be used in obtaining an interesting quality of definition in a picture must depend to some extent on the kind of equipment one uses. When a miniature camera is used and enlargements are made from a very small negative, it is usually more convenient to make the original negative sharp and use one of the described methods of getting softer definition in making the enlargements. There are, however, soft-focus lenses for miniature cameras, such as the " Thambar " for the Leica, and the Duto soft-focus attachment for the Rolleiflex and Rolleicord.

When the original negative is sharp all over and is softened by means of screens or diffusion in enlarging, the softening is carried out to the same degree all over the picture. Every part of the picture is equally diffused: foreground, middle distance and distance are all the same; but with a soft-focus lens, properly used, the softening need not be universal. The foreground, for instance, may be more sharply focused than the distance, and instead of a picture soft all over, with everything equally diffused, we can have the principal object standing out clearly against a subdued but perfectly coherent background.

With a soft-focus lens one can make a picture that will carry better than one made sharp and softened in enlarging, for the picture closes up and becomes coherent at a little distance, like a good impressionist painting.

For portraits and figure studies such lenses are often particularly suitable. It is possible when using such a lens to secure delightful textures, subtle modeling, and roundness. There is no insistent and irritating detail, but just the personality, the character and individuality of the subject, with the essentials emphasized and the unessentials eliminated. When a generous exposure is given and the film developed for softness and shadow detail, little or no retouching will be necessary on portrait negatives; in fact, handwork of any kind, however skilful, will be apt to destroy the quality.

A soft-focus lens is an instrument that needs to be studied and experimented with to some extent before its full capabilities are discovered, and in this study and experiment there is much joy for the conscientious artist. Such a lens improves on acquaintance; the more one uses it, and the more fully one understands it, the more one realizes that the maker of it has placed at our disposal an ideal instrument for the work in hand.

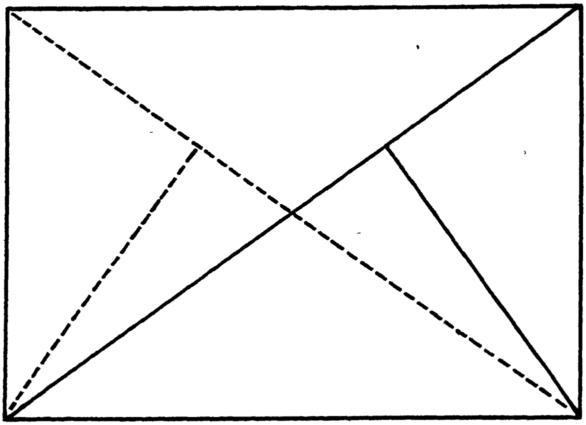
Of course the quality of the definition in a picture is not always a very important factor in its success. A picture is not necessarily pictorial just because a soft-focus lens or a special diffusing screen has been used, nor is it necessarily lacking in pictorial interest if it is sharply defined. Perhaps the safest recommendation as to definition would be to say that it should not be either noticeably sharp or noticeably unsharp. If the definition is such that it does not call attention to itself and one is not conscious on viewing the picture that it is either sharp or not sharp, the definition is probably perfectly satisfactory.

In the case of some of the illustrations used in this book, it may be interesting to note that " Staten Island Ferry," Fig. 11, was printed through a Halie screen; " An American Boy," Fig. 18, needed a Misonne " Soft-Sharp " screen, and " Surf at Bass Rocks," Fig. 12, "The Explorers," Fig. 16, and "Sumac Lane," Fig. 21, were made with a soft-focus lens.

Accent.—In another chapter we refer to the desirability of keeping the tones in a picture quiet and simple, and of avoiding too great contrast of light and dark or too long a range of tones, but if this is carried to extremes the result may be weakness and monotony. If a picture is composed of only a few tones, a definite accent is usually needed to pull them together and make the picture interesting. If the prevailing tones are dark, the accent may well be light, while if light tones predominate in the picture, a dark accent will be needed. Very often the accent is used to emphasize the main object of interest in the picture. Sometimes the main object itself may present sufficient contrast to make it stand out prominently from its surroundings. When the accent itself forms the principal object of interest in the picture, its position in the picture space must be carefully considered. It will be found, as a general rule, that a point about one third of the width of the picture space from the top or bottom of the picture, and about one third from one side, will be a strong position for such an accent. These points may be found by imagining that your picture space is divided both vertically and horizontally into three equal strips by lines that will cross each other at four points. Each of these four intersection points will be a strong position, and an accent at any one of these points will be well placed in the picture space. It will not matter at all what the shape of the picture may be, whether it is an upright or a horizontal rectangle, or a square, for these four points, each of them one third of the width of the picture space from top or bottom and one side, will be strong points. So, in trimming the print, or in arranging the picture on the focusing screen, it is a good plan to get any prominent accents as near one of these strong points as possible.

Another very popular method of determining the strong positions in a picture space is to draw a diagonal and then erect a perpendicular from the diagonal to an opposite corner, as in the diagram. In the case of a square picture all four of these strong points will coincide in the center.

The accents in "White Swan," Fig. 13, "Sailing," Fig. 28, "Apple Valley," Fig. 45, "Shell Beach," Fig. 47, and some other illustrations, have been placed approximately at these points.



Figures in Landscape.—In a landscape picture, a small figure or group of figures carefully placed in the picture space may often serve as an accent. This is just what has been done in "The Explorers," Fig. 16 and "Running In to See Mr. Lincoln," Fig. 3. The figure in such pictures is not merely an accent of contrasting tone; it is the main object of interest in the picture, and gives it the needed touch of human interest.

Whether figures shall or shall not be included in a landscape or a marine picture depends entirely upon whether they are needed to carry out the idea. If they help the picture to tell the required story, they should be put in, and their size and importance should be regulated by the importance of the part they play in the composition. Mere size does not always determine the importance of figures in a landscape. They may be quite small, and yet acquire considerable importance by reason of their placing in the picture space and their contrast in tone.

The arguments in favor of including figures in landscape pictures are these: they increase the range of emotions that may be expressed in the picture; they help to accentuate the important features; they often provide the vertical or diagonal line that is needed to balance horizontals in the landscape; a figure is sometimes helpful in suggesting scale; and unusual height of buildings or trees may be indicated by the comparison with figures. In genre pictures figures are nearly always needed to tell the story. Against the use of figures are the facts that they are sometimes difficult to harmonize with a landscape as regards form and pose, expression and costume, and that many emotional qualities such as wildness, ruggedness or desolation are lost in their presence without the most careful treatment. The artist must decide for himself whether the landscape or the figures are more important.

The laws of principality and unity, harmony and balance, must always be observed. The picture should tell one story, and only one. So, in every case, we must decide whether figures are needed or not. If we decide that figures are needed; if we decide that the figures are more interesting than the landscape and that they are to form the main object of interest in the picture, we must try to make the landscape subordinate to the figures, so that it will serve merely as a setting and a support for them. A painter, by the skilful use of color, can make idyllic pictures in which a figure or a group of figures is not the dominant thing in the picture, but for a photographer this is more difficult. When there is only one figure and it is intended to be the dominant item, it should be placed in the picture space in accordance with the general laws of composition. When there are two or more figures, one must dominate the others, or they must be grouped together so that the interest will not be scattered. They may well be engaged in some common occupation which will provide a reason for the grouping.

If the idea of the picture is romantic, in the sense that it is a picture that tells a story, figures may be needed, but a safe rule is to omit figures when there is any doubt as to whether they add to the picture or not. There may, of course, be figures in a landscape that are merely quite unimportant accessories; they may help to develop the landscape and not detract from its importance. On the other hand, if the figures tell the story, the landscape must be subordinated as much as possible. In " The Explorers," Fig. 16, "Budding Contenders," Fig. 15, "Warmth of the Winter Sun," Fig. 38 and "The One that Got Away," Fig. 44, the story is told by the figures, while the landscape merely provides an appropriate setting, but in " Florida Beach," Fig. 2, the little figures in the foreground are entirely subordinate, yet add a touch of human interest.

The subject of figures in landscape pictures naturally leads to the consideration of genre work, for when the figures are the important part of the picture and the landscape is subordinated to them, the picture comes into the class of genre rather than landscape. Genre subjects often provide good material for the photographer, and this is a branch of artistic work that can be handled very adequately by the camera. Such pictures come under two general heads: some are planned and arranged by the photographer, and some, occurring naturally, are seen and seized upon by the photographer without any preliminary arrangement on his part. In other words, the composition may be either constructive or selective. In building up such pictures, the important principles of art should always be observed. Unity, balance, simplicity and harmony must all be considered.

Genre.—A genre picture, as distinguished from a portrait group, should emphasize the occupation of the persons rather than the persons themselves, and, therefore, it is often permissible that some of the figures may be turned away from the camera, either entirely or partly, if arrangement and idea are thus best served. In " Budding Contenders," Fig. 15, all the figures are turning their backs, and in "The Explorers," Fig. 16 none of the boys are rendered in such a way as to show the features, but in both cases the story is told clearly and that is the main requirement. Figures 16 and 44 were obtained by seizing the opportunity as it occurred and making the exposure without any preliminary posing or arrangement of the figures. In fact, I do not think, in either case, the boys shown in the pictures were aware that they were being photographed. I think that this is the best way to secure the naturalness and lack of self-consciousness that are so important in such pictures.

In building up genre pictures with models who are fully aware that a picture is being made, the main difficulty is to avoid showing evidence of conscious posing. The difference in the use of the model by the painter and the photographer is at this point made manifest. To the one he appears as a suggestion, to the other he is the fact. The photographer must, therefore, be endowed with such distinguished gifts or conversant with such clever devices as will make the model forget himself. This can be done and often has been done with entire success by photographers. Perhaps the best examples I can refer to are the supremely perfect photographs of posed models that were made some years ago by Nicholas Ház and Guido Rey and more recent examples by Adolf Fassbender, each in its way a masterpiece of composition and arrangement. In these pictures, though each figure has been carefully posed, they all appear to be utterly unaware that they are being photographed.

Mr. Fassbender comments in "Pictorial Artistry," on his picture, "Budding Contenders," Fig. 15, as follows: "The boy at the left was dominating the conversation, emphasizing the import of his words every now and then with a wave of his apple-filled hand. I learned that the free-for-all sailboat race was to take place here in the park lake the next day. The present problem, however, was how the dickens could they get their impish little vessel to stop sailing in circles. Change the mains'l . . . heavy the ballast . . .

shorten the center-board. These were but a few of the many suggestions my eavesdropping ears overheard. Enough! Action! Camera! But I was not quick enough. The boys spied me. ‘Look, fellers,’ said one of them, ‘that man is going to take our picture. Will it be in the *News* tomorrow, Mister? Our boat is going to take first prize, you know.’

“The boys had to be carefully posed again, since the nonchalance of their natural postures had given way to a selfconscious stiffness upon seeing me. I persuaded them to resume their original positions at the water’s edge, and as their camera consciousness disappeared again, once they became engrossed in the solution of their navigating problem, I then caught the interesting little chapter of boyhood comradeship you see here. There is a steelyard balance of the principal masses in the picture area. Note how the separation of the boys’ heads from the light background of the water gives clarity to the motive. Likewise the placing of the light-toned sail against the dark reflection draws sufficient attention to this secondary mass to make it the logical continuing point of interest. The boat, drifting along the eddying and distorted extremities of the reflections, brings a welcome sense of motion to this area. The delicate reflections of the clouds were introduced in the negative afterwards to give a feeling of substance and reality otherwise lacking in the lighter toned water areas. This was done with chalk on ground-glass substitute. General tone balance was brought about by local reduction of the negative.”

Those of us who are not endowed with such persuasive eloquence as is possessed by Ház and Fassbender will find it much easier to take advantage of the facility offered by photography for making the picture almost instantaneously when the figures are either totally unaware of what is being done or are not making any conscious effort to adopt a preconceived pose. The speed of modern lenses and films and the unobtrusiveness of present day cameras make this much easier of accomplishment than it used to be. As a result of this, the prevailing craze for so-called " candid " photography, whereby harmless and unsuspecting subjects are often photographed in undignified and often rather ludicrous positions is becoming rather tiresome. Important people and those who are not so important are innocent victims and the owner of an inconspicuous miniature camera with a tremendously rapid lens often forgets courtesy and good manners in his anxiety to get some pictures that will demonstrate what his equipment can do. This has resulted in such cameras being regarded with disfavor in many instances. In making genre pictures by " sneaking up " on your subjects and photographing them unawares, remember that it is necessary always to respect their rights and privileges and to be careful not to do anything that might be in any way objectionable.

It might be well to mention here that if at any time such pictures showing human beings in such a way as to be easily recognizable are sold to newspaper or magazine editors or to advertisers or are entered in a picture competition, it is necessary to get a signed release from the persons in the picture before they can be reproduced.

CHAPTER III

Pictorial Composition in Practice

IN pictorial photography nothing is more essential than personal control. There must be intelligent guidance at every step.

Just as a musical instrument is capable of producing either pleasant music or a rather terrible noise according to the skill of the player, so a camera is capable of producing pleasing pictures or something rather terrible according to the way it is handled.

Personal control is by no means confined to handwork on a paper negative or the manual control that is possible in many of the control processes. These are methods that are frequently used to good advantage and they are methods that have very interesting possibilities in the hands of an expert, but they should always be used in addition to and not instead of trained craftsmanship.

There are various schools of pictorial photography, each of which has its enthusiastic adherents. There are those who use the photographic negative merely as a starting point and, with the negative as a basis, work up the final picture by manipulation of the process or by means of handwork on an enlarged paper negative. There are also those who believe that photography in itself has tremendous possibilities for satisfying artistic expression and who wish to avail themselves to the full of these inherent possibilities and use them to the best possible advantage. But because of the very great possibilities for modification of the final result that are available at all the various stages in making a picture, whatever methods may be employed, the need for proper control and intelligent guidance at every step is always most insistent.

The selection of suitable lighting and atmospheric conditions under which to photograph an outdoor subject is a factor that cannot actually be controlled, though it is always possible to refrain from making exposures when the conditions are not favorable. The selection of the sensitive material to be used and the use or nonuse of a filter are factors that are subject to personal control and as the proper selection of film and filter are so important, some detailed discussion must be given to that important matter. Another important factor in the control of results is the exposure of the film and the development of the negative, and these will also be fully discussed, for the pictorialist must understand all these things well if he is to be able to avail himself of the possibilities for control that they offer. The control that is possible in making the final print will also be explained.

Of course there are many people who just perform the various operations in the production of a picture with no real understanding of what they are doing. They get their results by utterly haphazard methods, and then they wonder why a certain picture did not " come out " as they wanted it, in spite of the fact that they did absolutely nothing to make it come out in the desired way.

If you want a photograph to have certain definite qualities and if you want to get a certain desired effect in your picture, you must do what is necessary to secure those qualities and to get that effect. You must understand the mechanics of the process so that you can guide it and control it and get with it the results you want to get, for the camera will not produce results automatically any more than a brush or a pencil will draw a picture automatically.

There is a very common belief that the camera is merely a machine and that photography is more or less mechanical, so that after you have " pressed the button," you have to take what the camera gives you — and like it. Really, however, the camera is very far from being an automatic machine and there is much that can be done to modify the final results.

If you want to convince yourself of this, study some pictures by some of the leading pictorialists and see how different and individual their results are. Whitehead, Misonne, Keighley, Thorek, Fassbender and many others all have an individual and distinctive style that can be recognized instantly. The individuality is shown not only in their choice of subjects but in the way they treat the subject matter.

So if you elect to use a camera for making pictures instead of pencil, brushes or etching needle, you must master your camera and learn how to make it produce for you the results that you want.

Photography has a recognized place among the fine arts and it possesses inherent individual qualities that differentiate it from other mediums of pictorial representation, just as one musical instrument differs from another. This outstanding quality of photography that sets it apart as an artistic medium is, of course, its ability to reproduce infinitely subtle and delicate variations and *nuances* of tone and gradation. It can reproduce surface textures, of course, but it can also reproduce landscape values so that they will suggest depth, distance and color. But it will not do this unless it is properly controlled and guided.

Because of this tremendous flexibility of photography — because there are so many chances of going wrong as well as so many possibilities of going right — it is necessary for a pictorial photographer to know what can be done and how he can do it to make the camera give results that shall be worthy and satisfying. The point I want to emphasize is that if an artist selects photography as the medium with which he is to tell his story and convey his message to others, he should realize what photography is capable of and should know how to use its great possibilities to the best advantage. There is no objection to handwork on a paper negative or to any other such means if an artist sees fit to use them, but I believe there are many who do not fully appreciate the possibilities for control and modification that are inherent in the medium itself. Many people do not realize how much there is that they can do in the way of guidance and control in the usual photographic processes. There are far greater possibilities of artistic achievement in perfectly straightforward photography than many people have as yet discovered.

There is a tendency today to try to reduce photography to an exact science and to measure all the variable factors in picture making with scientific instruments, photoelectric cells, and so on, but as there are so many factors that cannot be accurately determined, picture making must always remain a matter of craftsmanship, trained experience and artistic feeling. There are so many variable conditions that cannot be controlled that success in outdoor photography may almost be said to be a matter of luck in being in the right place at the right time, but while that is perfectly true, the possession of the knowledge, ability and skill to take full advantage of favorable opportunities is not luck, but is the result of study and practice. Though we cannot control all the conditions, we can take advantage of them if we are able to recognize them and know what to do.

A painter may see an interesting effect and may set to work to get it on his canvas, but before he can do so, the effect he saw will probably have changed — it may be better or it may not be as good — and he will have to rely on memory and imagination, but a photographer can often take advantage of such an opportunity and get a result without delay.

I was driving through Waterbury, Conn., one afternoon when I saw a subject that appealed to me — a bit of hillside, a tree and a few cows, and an interesting sky — so I stopped and photographed it. I wanted to make a second exposure, but the one I had just made happened to be the last on the roll, so I had to put in another film and in the few moments that it took to change the film, the subject had altered so much, because the cows were in different places and the sky had changed, that the second exposure, made only a few minutes later, had no pictorial value. The result of the first exposure is shown in Fig. 17, " A Connecticut Hillside." There is a little bit of hillside, a big, old maple tree and a white house, somewhere in the New England Berkshire hills, that has been photographed by several pictorialists, Frank R. Fraprie, Franklin Jordan, George Slade, Raymond Hanson and Hermann Lythgoe, and, though they were made under very similar conditions and some, even, at almost the same time, all the results, while sufficiently alike so that the subject can be identified, are very different because of the different way in which each of these men dealt with the subject.

The two pictures entitled " The Frozen Stream," Figs. 26 and 27, show how differently the same material has been treated by different workers.

" Is It Nothing to You? " Fig. 10 is an example of a subject that depends upon the selection of favorable conditions. I have seen that crucifix (on Route 1 between Richmond and Petersburg, Virginia) several times when the subject offered no incentive at all to make an exposure except for the interest in the object itself as a record, but the sky the day it was taken made it pictorial.

Landscape Values.—Remembering that the outstanding virtue of photography is its ability to render delicate and subtle gradations of tone, it will be obvious that the most important thing for a pictorial photographer to learn is to reproduce landscape values correctly. The ability to see and appreciate landscape values is something I cannot teach; it must come as a result of long and careful observation of nature, but I can point out some of the things that can be done by a photographer in order to reproduce in a photograph the landscape values he has learned to see.

It is really rather surprising to find how widespread is the lack of understanding of landscape values in a picture. Only a very few photographers seem to know what truthful values should look like. Not only are landscape values very often incorrectly rendered, but in many of the portraits that are made today, professionally and otherwise, the flesh tones often are very far from being properly reproduced. This probably is due to the use of strongly red-sensitive emulsions with the resulting tendency to render flesh tones too light in value. A little careful observation of the people around us will show that their faces are not as light in tone as they are often rendered in a photograph.

As a matter of fact, the only parts of a face that can truthfully be represented by white paper are the catchlights in the eyes and — if the teeth are showing — the highlights on the teeth. All other tones must be darker in order to suggest the color and general tone value of the face.

Careful study of the portraits and figure studies shown as Figs. 4, 5, 18, 23, 34 and 35 will show that in every case some attention has been paid to the proper rendering of the flesh tones.

And it is very much the same with outdoor subjects. There is very little absolute white and very little solid black in an average outdoor scene. The sky, of course, is seldom white; only the highlights on sunlit cumulus clouds can be white. A white building in sunlight is generally lighter in tone than the sky. See "The Lightkeeper's House," Fig. 6, made in Bermuda on orthochromatic film, with a light yellow filter, and "Cape Elizabeth," Fig. 42, made on Finopan film with medium yellow filter.

As far as shadows are concerned, it is a good plan to remember that they are rarely absolutely black: there should usually be some luminosity, depth and transparency in the shadows.

Much of the fine modern photography of today is characterized by excellent tone values. Among the factors that affect the rendering of tone values are: the choice of a suitable emulsion, panchromatic or otherwise; the selection of a suitable filter or the use of no filter at all; the adoption of a suitable filter factor; the calculation of correct exposure and the proper development of the negative. All these things and, of course, the making of the final print, determine the success of the picture. These are what a pictorial photographer must thoroughly understand if he is to be able to control his results fully and successfully.

There is a tendency today to neglect many of the possible means of control in making the negative and to modify the final result by a lot of manipulation and control in making the print. The making of a print from a negative may be and should be a very simple operation, for it consists only in transposing the negative values in the film to the corresponding positive values. It is a purely automatic operation that is, however, amenable to considerable control according to the printing process that is used. However, if the pictorial photographer has secured in the negative the tones and values that are approximately correct, he will find that the making of a good print is really very easy.

This is what the "purist" always strives for: a perfectly straightforward print from a negative in which the tones and values are just right and it cannot be denied that many such results are entirely satisfactory in every way.

Even if the photographer uses one of the control processes, such as bromoil, he will be apt to get a far more pleasing and more convincing print if he gets his values as correct as possible in the negative and then makes a more or less straightforward print from that negative.

Color Sensitivity of Films. — There are a great many excellent films now available and a few words of explanation of their varied qualities and of their adaptability for pictorial photography should be helpful to the beginner and to those who may not be getting the results they want.

An important difference in sensitive emulsions now in use is their varying sensitivity to different portions of the visible spectrum. White light can be shown to be made up of a series of colors ranging from violet and blue, through green, yellow and orange, to red. The generally accepted theory of light and color is that these different colors are light waves of different wave lengths, the violet being the shortest and the red the longest. For convenience, these wave lengths have been measured and their lengths are expressed in a unit known as mμ which is one-millionth of a millimeter. The wave lengths of the visible spectrum range from about 400 mμ to about 700 mμ. There are longer and shorter wave lengths at each end of this visible spectrum, those at the blue end being known as ultraviolet and those at the red end being described as infrared. These invisible rays also affect the sensitive photographic emulsions, the ultraviolet being very actinic, while the infrared will affect only certain emulsions that are sensitive to red.

As far as photography is concerned, the sensitivenesss of photographic emulsions to the various parts of the spectrum has always offered an interesting problem. The old-fashioned " color-blind " plate was abnormally sensitive to blue and to the violet and ultraviolet rays, but it was only very slightly sensitive to yellow and green and was practically insensitive to red. Therefore it would reproduce red as black, and orange and yellow almost black, while, on the other hand, being so very sensitive to blue and violet, these colors were often made to appear much too light. Because this plate was not affected by red, we were able to use a red light in the darkroom and because it was so strongly affected by blue, it often happened that the blue parts of the sky would come out just as light in tone as the white clouds so that the entire sky area was equally white all over. These " bald-headed " skies were so frequently seen in old time photographs that when better corrected plates and films were available and it was possible to get more correct sky values, many people did not understand it and preferred the nice, white skies.

In 1873, Professor H. W. Vogel discovered that by treating the emulsion with a solution of erythrosine it became far more sensitive to yellow and yellow-green, and from then on we have had plates and films that are sensitive to these colors as well as to blue. These emulsions are described as being "orthochromatic." But the orthochromatic emulsions are still practically insensitive to red and it was not until the beginning of the twentieth century that we had red-sensitive materials which were in turn described as panchromatic.

In 1906, the "Wratten Panchromatic Plate," manufactured by Wratten and Wainwright, appeared on the market. This plate is sensitive to red as well as to yellow and blue, and therefore it is sensitive to the entire range of the visible spectrum.

The manufacture of this plate was taken over by the Eastman Kodak Company in 1912 and from then on there has been considerable research and experimentation on the subject of panchromatism. In 1930 some entirely new sensitizers were discovered, which made it possible to manufacture emulsions of far greater speed and increased sensitiveness to colors, and we now have a large number of very fine films that are not only extremely rapid but are also sensitive to the entire visible spectrum, as well as to invisible rays at both ends of the spectrum.

The invisible rays extend beyond both ends of the visible spectrum. The ultraviolet rays become identical with X-rays and the infrared get longer without limit and merge into the electrical rays that are used in radio transmission.

Some very interesting possibilities have resulted from the extension of the photographic spectrum. The infrared become heat rays, and photographs have been made on infrared sensitive plates of a hot object, such as an electric iron in total darkness, by means of the heat rays emitted by the iron. A great deal of useful and valuable work in connection with aerial photography and the penetration of haze has been undertaken by the use of red sensitive plates which have also been of great value in astronomical photography.

The ultraviolet rays at the other end of the spectrum cannot be used photographically with ordinary glass lenses because these rays are almost totally absorbed by glass, but by using quartz lenses, some very interesting results have been obtained.

However, these interesting phenomena do not really concern the pictorial photographer, so we need not go further into the scientific applications of these modern emulsions other than to know what each is best adapted to do.

With modern orthochromatic and panchromatic films and the large variety of filters that is now available the pictorial photographer can control the tones in his pictures to a very considerable extent and when he understands the properties of the different films and the effect that is produced in the rendering of landscape values by the use or nonuse of certain types of filters, he is beginning to exercise personal control over the results he is trying to get. As this is a very important matter for the pictorialist, even at the risk of being somewhat tiresome, it is necessary at this point to describe the different types of film a little more minutely as regards their response to color rays, so that we can get a clear idea of the effect produced by a few of the most useful and most commonly used films and filters. We do not need to go into things with extreme scientific accuracy and will indicate only the outstanding, practical points of difference that would be of use to a pictorialist.

Color-blind emulsions are still quite frequently used in some branches of commercial photography, but as they offer comparatively few advantages to the pictorialist, compared with the more fully corrected orthochromatic and panchromatic emulsions, we need not discuss them further at this point.

Orthochromatic emulsions are sensitive to yellow and yellow-green as well as blue, but are not sensitive to red. This, however, does not spoil their usefulness and desirability for use in outdoor landscape or marine photography or for any subjects in which red is not an important color. An orthochromatic film of moderate speed such as one of the " chrome " type, Verichrome, Plenachrome, Selochrome, and so on, is very well adapted for pictorial work. We will discuss the use of these films in further detail later on.

The modern panchromatic film is sensitive to the entire range of visible colors and is therefore capable of rendering color values in their true visual intensity. Such a film can reproduce as varying shades of gray in the photograph all the relative values or light intensities of the objects photographed.

It might well be thought that this accuracy in reproducing values would tend to diminish the value of such films as tools for the artist who may wish to control the rendering of values instead of reproducing them with scientific accuracy, but this is just what the artist can do, because different types of panchromatic emulsions react in different ways to the different colors and, furthermore, as will be explained later, the intelligent use of filters offers added possibilities for control.

The panchromatic emulsions manufactured by the Eastman Kodak Co. are divided into three classes:

Class A includes the older type of panchromatic emulsions such as were in use before 1931 and which are still preferred for certain purposes. These emulsions are less sensitive to red than to other colors.

Class B films are those that are sometimes described as " orthopanchromatic " materials and they are of a color sensitivity that approximates very closely to the color sensitiveness of the eye.

Class C emulsions are sensitive to all colors but are rather oversensitive to yellow, orange and red. These films are known as " hyperpanchromatic " films.

The films that are included in these three classifications are:

Class A — Eastman Panchromatic Process film
Eastman Commercial Panchromatic film
Class B — Wratten Process Panchromatic plate
Wratten Panchromatic plate
Eastman Portrait Panchromatic film
Kodak Super Sensitive Panchromatic rollfilm and filmpack
Kodak Panatomic-X rollfilm and filmpack
Kodak Plus X film
Kodak Super XX cut film
Class C — Eastman Super Sensitive Panchromatic film
Kodak Panatomic film
Super XX rollfilm and filmpack
Panchro Press
Super Panchro Press

Facts about Color. — Coming now to an explanation of the use of filters, we must modify to some extent the very frequent conception of the colors of the spectrum. The primary colors of pigments are blue, yellow and red, and the mixture of all three will produce black. As these pigment primaries are obtained by subtracting certain colors, they are known as *subtractive* colors. But when we are dealing with colored light, a different set of primaries is used. The familiar band of colors that is seen when a ray of white light is interrupted by a prism is divided into three approximately equal divisions and the part ranging from 400 mμ to 500 mμ is called blue, from 500 mμ to 600 mμ is green and from 600 mμ to 700 mμ is orange-red. As these three, when added together, form white light they are often referred to as *additive* colors. It is these additive colors that are important to photographers in dealing with color sensitive materials and filters for reproducing color values more or less correctly. The colors from light sources, sunlight or various types of artificial light, as well as the colors that are reflected by colored objects and the colors that filters absorb or let through are all mixtures of colored light and so they must always be regarded as the additive colors of light and not as the subtractive colors of pigments.

Another important fact about color is that every color has a complementary or opposite color. A colored object is said to be colored because it has the power of absorbing certain rays of the light that falls on it and reflecting the remainder. The color that is absorbed by the colored object is the complementary of the color that is reflected. The following table of complementary colors should be studied carefully because it is the complementary colors that are chiefly affected when using filters:

Color	*Complementary*
Red	Greenish-blue
Orange-red	Blue-green
Yellow	Blue
Green	Magenta
Blue-green	Orange-red
Blue	Yellow
Magenta	Green
White	Black

A filter, as its name implies, filters or strains out certain colors from the light that passes through it. It absorbs part of the light and allows the rest to pass through. The light that passes through is the light that we see and which gives the filter its color, and the color that is absorbed by the filter is the complementary of the color that is allowed to pass through. Thus, if we see yellow light when we examine the filter by transmitted light, we call it a yellow filter, but blue, the complementary color to yellow, is the color that is absorbed by that filter. Similarly, a blue-green filter absorbs its complementary color, namely, orange-red. So we might consider a yellow filter as a " minus-blue " filter, and a green filter as a " minus-red " and this will be quite helpful in reminding us that when a yellow filter is used, the blue rays are partly or completely absorbed and therefore do not pass through to affect the sensitive emulsion.

That is why the use of a yellow filter tends to make blue, such as blue sky, come out darker in the photograph and why a green filter needs sometimes to be used in outdoor work in conjunction with a Class C emulsion that is somewhat oversensitive to red.

All films, as we have said, are far more sensitive to blue and violet than to the other colors and although the panchromatic films of today have been wonderfully improved in respect to their sensitivity to yellow and red, they are still unduly sensitive to blue and it is for that reason that a yellow filter is generally needed to reduce this excessive sensitivity to blue.

From a scientific viewpoint it would seem to be generally advisable to use a yellow filter, as by so doing we can get an approximately correct reproduction of color values, and there are many occasions on which we can get very satisfactory results with either a panchromatic or an orthochromatic film and a yellow filter, but we are dealing with pictorial photography in which there must be scope for personal control. The requirements of the artist often differ from those of the commercial photographer and there are some rather important points of difference between commercial photography and pictorial photography that must be pointed out.

A commercial photographer when photographing colored objects — dress goods, food stuffs and so on — usually photographs the setup indoors by artificial light, and therefore the only light that affects his film is the colored light that is reflected from the colored objects. But the pictorial photographer, when he is photographing an outdoor scene, has an entirely different problem and one that is often much simpler, for as soon as we go outdoors and photograph objects or scenes by daylight, that is to say, by light that is reflected from the sky, we must take into consideration not only the actual, local color of those outdoor objects but also the large amount of very actinic blue, violet and ultraviolet light that all such outdoor objects reflect from the sky. Colored objects photographed outdoors reflect, not only their own local color, green, yellow, red or whatever it may be, but also a considerable amount of blue, so much so that if a sufficiently full exposure is given, it is quite possible to photograph such colored objects outdoors on a film that is not panchromatic and still get a fairly accurate rendition of color values.

And there is another point that the artist must consider in determining whether or not he needs to take advantage of full panchromatism, and that is whether or not he wants a scientifically accurate reproduction of tone values.

In making pictures as distinguished from commercial or scientific records, we often want to convey impressions by means of suggestion rather than by exact and literal reproduction and often, too, the scene as we see it and as we want to reproduce it in our picture is not as it really is, for the colors and values are often modified by atmosphere and distance.

Aerial Perspective.—One very desirable quality that we often want to retain in a picture is aerial perspective. This is the kind of perspective that imparts depth to a picture and gives a suggestion of space, distance and separation of planes.

This atmospheric effect is due to haze, which is caused by particles of dust and water vapor that reflect and disperse the blue and violet light, which is thus reflected into the camera to a varying extent, according to the distance between the objects and the camera. This effect causes the different objects in a landscape, as they recede into the distance, to lose intensity of color and contrast, and it makes the different parts of the scene appear to be more or less remote, so that we get a pleasing and satisfactory suggestion of separation of planes.

This effect was noted and explained many years ago by Leonardo da Vinci in whose " Note Book " we find:

" Objects being at a distance from the eye . . . and when this is the case there must of necessity be a considerable quantity of atmosphere between the eye and the object, and this atmosphere interferes with the distinctness of the form of the objects and consequently the minute details of these bodies become indistinguishable and unrecognisable." Again we find: " Shadows become lost in the far distance, because the vast expanse of luminous atmosphere that lies between the eye and the objects . . . etc."

Let us suppose that a white house and a dark oak tree are far off in the distance. The " vast expanse of luminous atmosphere that lies between the eye and the objects " might reduce the white house and the dark tree to the same shade of gray, for the tree, seen through the vast expanse of atmosphere, would look gray instead of black, and the brilliant rays of light reflected from the white house, in passing through the atmosphere, lose so much of their brilliancy that the house appears to be gray instead of white.

There are occasionally days in late summer when the atmosphere is very clear and dry, when there is presumably very little moisture in the air, and on those days the distance is unusually clear, distinct and dark in tone. I have seen such days in New Hampshire, toward the end of summer, when the hills across Lake Winnepesaukee look almost black, and one can almost distinguish individual trees and houses many miles away. A photograph made on such a day would be entirely lacking in atmosphere, even if made without a filter. The distance and middle distance would be just as dark, and would appear to be just as close as the foreground, and only the diminished size of objects in the distant planes would suggest perspective. The effect would be much the same as is seen in photographs that are overcorrected or underexposed. When there is no aerial perspective the distance does not go back satisfactorily and there is a lack of depth in the picture.

A lack of aerial perspective is very often seen in the pictures of today and this is due to a tendency to use filters rather indiscriminately and without stopping to consider whether or not they are really needed. It is also partly due to a very prevalent tendency towards underexposure which will be commented on later.

The pictorial photographer of today really has a good deal of control over the way the distant planes in a picture will be represented, for the clearness or otherwise of the distance in a picture depends to a great extent on the kind of film that is used and whether or not a filter is placed on the lens. The photographer may use the very efficient means that are at his disposal for rendering the distance clearly and distinctly or he may, if he wishes, deliberately forego these means and by so doing reproduce all the atmospheric haze that may be present or even exaggerate the hazy effect if he wants to do so.

A hazy, atmospheric distance is seen in Fig. 21, "Sumac Lane," in Fig. 25, "Summer," in Fig. 11, "Staten Island Ferry," and in Fig. 36, "Early Spring." In Fig. 43, "Thunder Over Amalfi," there are at least four planes that are each distinctly separated from the others. This gives a very convincing suggestion of depth and spaciousness.

Extensive research has been undertaken by aerial photographers along the lines of haze elimination, for in aerial photography and mapping from the air, the presence of haze is a serious obstacle. By using panchromatic emulsions or even infrared sensitive emulsions and yellow, orange or red filters, practically all of the atmospheric haze can be eliminated. By cutting out all the blue and violet rays and using only the yellow, orange and red, distant planes can be photographed clearly and distinctly from a great distance, for yellow and red will penetrate haze and mist while blue rays are dispersed and scattered.

That is why a " fog lamp " on an automobile is yellow or orange and it also explains why a street lamp on a foggy night sometimes looks yellow. It is also the reason why the " harvest moon " looks yellow when it is just appearing above the horizon and why the sun at sunset often looks yellow or red. The blue rays are dispersed by the fog and we see only the yellow and red rays which can penetrate the fog more easily. It is interesting to note in passing that the elimination of haze has been brought to such a degree of perfection that Major Stevens of the U. S. Army Air Corps has made photographs from an airplane at an altitude of 30,000 feet that show distinctly a mountain more than three hundred miles away.

But Major Stevens' main objective was very different from that of a pictorial photographer who usually does not want to eliminate any of the atmospheric haze, but who often would like to increase it. And that sometimes puts the pictorial photographer in a quandary, for he may want to use panchromatic material and a filter in order to hold back the blue of the sky to bring out the white clouds more strongly, and yet he may not want to sacrifice any of the atmospheric haze that may be present and which he needs in order to convey a suggestion of aerial perspective, depth and separation of the planes. By using a filter he could probably get a better rendering of blue sky and white clouds, and if he did not use a filter he could perhaps get a better rendering of distant planes, so it is often necessary to effect a compromise and use a very pale filter which will very often give an excellent rendering of clouds and still not cut through the haze too much. Sometimes if atmospheric effect and good clouds are both wanted in the same picture, it may be necessary to print-in the clouds from another negative. This is what was done in the case of " Summer," Fig. 25.

The amount of haze that is present can often be determined by the color of the sky. The bluer the sky looks, the less haze there is, and the whiter the sky, the more haze is present, so you would not expect to find a very deep blue sky with strongly emphasized white clouds when the weather is very hazy, which makes it not so necessary to use a filter.

Use of Filters.—It will be found that for general outdoor work in the summer, for subjects in which the prevailing colors are green, in grass and foliage, and blue and white in the sky, the use of an orthochromatic (chrome type) film, with a very pale yellow filter (K1, Agfa 1 or 2 or any similar filter) will give excellent results. Many pictorialists find that the slower varieties of panchromatic film, such as Panatomic X, Finopan, etc., used without a filter or with a very light yellow filter like those mentioned above, will give a very pleasing rendering of blue sky and white clouds and, at the same time, will not destroy aerial perspective.

It needs a little experience to decide just when and under what conditions a filter is needed and when it would be better not to use it. There are times when a simpler and more pleasing picture can be obtained by using no filter. Of course, when nature happens to be just right, and that does happen quite frequently in spite of Whistler's assertion that "nature is very rarely right," to try to improve on things would be a mistake. Very frequently the desired effect can be better secured without any filter; the dreary stillness of a gray day can be emphasized, or the mystery and charm of gleams of sunlight breaking through an early morning mist with a hazy and atmospheric distance can be enhanced. When working in a big city, we frequently need to soften and subdue an uninteresting and prosaic background, and often we can do so by not using any filter, as this will tend to increase any fog, haze or smoke that may be present, whereas, if we used a panchromatic or orthochromatic film with a filter, all the commonplace and uninteresting details in the background would be brought out distinctly.

The artist who knows when and how to use a filter and who knows also when and how to obtain certain desired results without a filter is the skilled craftsman, whereas one who works by a single, fixed plan, whether he uses a filter or whether he does not do so, is working mechanically.

The conclusions that can be drawn from this discussion of the various types of films and of the effect that may be expected from the use of a filter are that a proper understanding of the subject will provide the pictorial photographer with a useful means of controlling his results.

A red filter is sometimes advocated for making what are termed " moonlight " effects, but because of the fact that the chlorophyll reflects infrared rays very strongly, green foliage is so incorrectly reproduced as to destroy the true night effect. It is true that we do sometimes need to darken the sky tones for the sake of emphasis, but we seldom, if ever, need to make the sky absolutely black.

When a filter is used for restraining certain colors, such as for holding back and darkening the blue of the sky, some of the light that falls upon the filter is absorbed, so that only part of the total volume of light reaches the sensitive film. Therefore, the exposure needs to be increased to make up for the light that is lost, and the amount of this increase or the number by which the exposure time without the filter must be multiplied to get an equivalent exposure with the filter, is known as the filter factor for that particular filter and that particular film. The filter factor varies according to the amount of light that is absorbed by the filter (which is determined by the depth of color in the filter), by the nature of the light (whether it is daylight or artificial light), by the sensitivity of the film to the light that passes through, as well as by the effect that is desired, so the factor that is given by the makers of the filter applies only to that particular filter used in conjunction with a particular type of film under a certain kind of light. The table on page 66 gives the filter factors that are recommended by the Eastman Kodak Company for a few of their most popular filters.

	PANCHROMATIC						ORTHOCHROMATIC	
FILTER	Type A		Type B		Type C			
	S*	A	S	A	S	A	S	A
K1	2	1½	1½	1½	1½	1½	3	2½
K2	2½	2	2	1½	2	1½	5	4
K3	2½	2	2	1½	2	1½	9	5
G	4½	3	3	2	2½	2	24	14
X1	6	4	4	3	5	4	—	—
X2	7	5	5	4	6	5	—	—

*S = sunlight, A = artificial light

Other filters that are often used are the Kodak Color Filter and the Aero No. 1, and in the Eastman publication, "Wratten Light Filters," the spectrophotometric absorption curves given for these two filters indicate that they are both very similar to the K2. Factors for other makes of filters for various types of films can readily be obtained from the manufacturers.

Filters are often described as *corrective* or *selective* filters, and the difference between the two types of filters is this: the corrective filters cut out only part of their complementary color and reduce its intensity, while the selective filters remove practically all. The K filters and the X filters are corrective filters. The K1, K2 and K3 absorb only part of the blue in varying degrees according to their depth of color. The K1 allows part of the ultraviolet as well as a large part of the blue to pass through, so that it does not unduly increase the exposure. The X1 and X2 (green filters) reduce the strength of the red rays but do not cut them out entirely. The G (orange) filter is a selective filter, as it cuts out practically all of the blue and violet. With a G filter a blue sky will be rendered as black and the white clouds will stand out on it very strongly.

It will be seen from all this that there is plenty of scope for variation of the results by using different combinations of filters and sensitive emulsions and each individual must work out his own preference for pictorial subjects. If rather striking, fully corrected skies are desired, the stronger yellow filters will give them, but the stronger the filter, the more it tends to cut out haze and atmospheric effect. Very varied results are possible and there is plenty of scope for personal control of the results.

Film Speed and Fine Grain.—In addition to their classification as to color sensitivity, films are further classified as to their speed and as to fineness of grain. There are occasions in the industrial uses of photography when extreme speed in the emulsion is either very desirable or absolutely necessary, and that is a matter to which the film manufacturers are paying considerable attention. Films are now available that are much faster than any films previously obtainable.

The pictorial photographer, however, when working outdoors, very seldom needs to use an emulsion of extreme speed, and it is generally advisable not to do so unless speed is a sufficiently important factor to make it necessary to sacrifice other desirable qualities, for we must remember that, although this ultrarapid film material that is now obtainable is really extraordinarily fine in all respects, it cannot be denied that in gaining speed, it is inevitable that other important qualities such as fine grain, rich gradations and latitude must be sacrificed to some extent.

In photography we often have to compromise, and what we gain in one direction we lose in another. In lenses, for example, we cannot have both speed and depth of focus at the same time; when we open up the diaphragm to gain speed, we lose depth of focus, and when we gain depth of focus, we lose speed. So we often have to choose those qualities that are important for the particular purpose we have in mind and sacrifice other qualities that are not so much needed.

Too many amateur photographers are inclined to use the ultrarapid panchromatic emulsions for everything. They do not realize that for many subjects and for certain effects a slower film may be more appropriate. It is often forgotten, too, that while the film manufacturers have been improving materials and manufacturing methods to enable them to improve ultrarapid panchromatic emulsions so greatly, they are applying these improved methods also to the manufacture of other types of film, so that the slower films such as Panatomic X, Finopan and orthochromatic films of medium speed such as Verichrome, Plenachrome, Selochrome, etc., have been improved just as much as the more rapid varieties.

These medium-speed films have all the speed that is necessary for the general run of outdoor pictorial photography and, at the same time, they have rich gradations, wonderful latitude and finer grain than the ultrarapid emulsions. As a matter of fact, for an ordinary outdoor summer landscape in which the prevailing colors are green in grass and foliage and blue and white in the sky, and in which there is very little red, a red-sensitive film is really not needed. For this kind of work an orthochromatic film, such as Verichrome or Plenachrome, used with or without a filter according to the effect desired, will usually be very satisfactory. For those who prefer panchromatic films, the medium-speed panchromatic films such as Panatomic X or Finopan are excellent, and, as their name indicates, they have very fine grain.

A detailed discussion of grain and how to avoid it does not seem to me to be at all necessary in a book that deals with the pictorial possibilities of photography. It is a subject that has received far more attention than it really deserves, so much so that many people believe that all kinds of special precautions must be taken to avoid grain.

Such precautions may be necessary when extreme enlargements are to be made from a tiny negative or from a very small part of a larger negative, but in pictorial photography, as a rule, such tremendous enlargements are seldom called for and if we can get a negative that has sufficiently fine grain to make it possible to enlarge to eight or ten diameters, that is generally all that is necessary. There is no doubt at all but that by giving adequate exposure, by using a good film of medium speed, by developing carefully in a developer that does not contain much carbonate and that is capable of producing a negative with good detail and gradations (the kind of negative that is well suited for enlargements), we can get a negative that has so little grain that it will not be apparent at all in a moderate enlargement.

In many cases, even if there is a little grain it will not matter, because it is often possible to eliminate it entirely in making the print. By making a bromoil from an enlargement that shows a little grain, it will be found that the grain will practically disappear. Or by using a Halie screen and adding more grain in the printing, the original grain will not show.

I do not mean to imply that the pictorial photographer should be careless in this matter of grainy negatives, for grain is always something that should be avoided, but I believe that it is better to develop a negative with metol or glycin or any good, standard developer that will give good gradation and quality, than to use some special formula or method of developing that eliminates grain but that also eliminates the delicate gradations and quality in the negative.

CHAPTER IV

EXPOSURE AND PRINT QUALITY

ONE of the most important means of personal control in pictorial photography is in the exposure of the film in the camera. Broadly speaking, a full, generous exposure will give a negative with good gradation and shadow detail, while a very short exposure tends to produce greater contrast.

There are today many excellent and extremely efficient exposure meters that make the estimation of correct exposure a comparatively simple matter, but there must be a clear understanding on the part of the photographer as to what constitutes correct exposure.

There is a tendency today towards underexposure, and in striving for " snap," contrast or brilliancy in their prints, many photographers get solid black and empty shadows and chalky highlights that are entirely devoid of texture. Generally speaking — for there are, of course, many exceptions — there should be very little solid black and very little blank, white paper in a print.

The tones and the range of contrast in a photograph depend very much on the exposure and, at the same time, the exposure that is needed must depend on the range of contrast in the subject. Tones and exposure are so intimately connected that we must have a clear idea as to what we mean by " tones."

What we call tones in a picture are the shades of light and dark which represent the contrasts of reflected light and the color values of the objects photographed. The relation of these tones to one another varies according to the strength of the light by which the objects are illuminated. An outdoor scene would vary very much in regard to its contrasts of light and dark and its color values, according to the strength, direction and quality of the light. In bright sunlight the contrasts would be stronger and the colors brighter than on a dull day, and the problem is to reproduce these contrasts of light and shade and these color values as varying tones of monochrome, so that they will truthfully convey the desired impressions. Where light falls on an object and is reflected back to the eye, we see a highlight; where it strikes at an angle and is reflected back other than directly to the eye we see halftones; where no direct light falls on the object we have shadows: and these highlights, halftones and shadows are modified by light reflected into them by other objects and by other parts of the same object. The lens can see light contrasts, highlights, halftones and shadows in just the same way as the eye, but in many subjects there is too long a range of tones, too much contrast between the lightest and the darkest tones, for us to be able to get them all in the picture.

We can get a greater range of tones in a negative than it is possible to reproduce by any method of printing on paper and we are often handicapped by the limitations of the printing process in this respect. If we have a negative with a long range of tones, longer than the printing process can accommodate, when we try to print from that negative we have to sacrifice some of the tones at one end of the scale or the other. If we print until the gradations in the highlights are visible, we find the shadows are much overprinted and will be black and solid, while, if we print for the shadows, the highlights will be harsh and chalky and entirely lacking in gradation. No printing process, except a positive transparency or lantern slide, can give as long a scale as it is possible to secure in a negative on a heavily coated film and it is necessary for the pictorial photographer to recognize this fact and keep the range of tones in the negative within the limits of the printing medium he intends to use. By regulating the exposure and development of the negative, it is possible to determine the range of tones and to keep them within the limits of the printing process. We can shorten the tone scale in the negative, if it is necessary to do so, by giving a full exposure to get shadow detail and then developing only far enough to get just the right amount of density in the highlights. Then when we make a print from that negative we will find that although the range of tones from the darkest shadow to the brightest highlight is not as great in the print as in the actual subject, they will have approximately the same relative relation to one another. The actual highlights in the subject will be highlights in the picture and everything that is lower in tone than these highlights will be lower in tone in the print. Suppose we are photographing a landscape in which there is a white barn or a whitewashed wall. If the sun is shining on the barn or whitewashed wall and there are no clouds in the blue sky, the sunlight on the white barn or whitewashed wall will make those objects lighter in tone than the blue sky. If, however, we develop the negative too far so that these highlights become a bit too dense, with the result that in the print the sky is white and the barn is also white, the tones will be wrongly reproduced.

In a portrait of a person dressed in white we often see incorrect values. In such a subject as has already been mentioned the only parts that could be actually white are the extreme highlights on the white clothing, the catchlights in the eyes and, if the teeth are showing, the highlights on the teeth. The flesh tones, even the highlights on the face, should be lower in tone than the highlights on the white clothing.

Even if our range of tones is shorter in the picture than in the subject itself, as it often is when we have to compress the tones into a shorter scale, we can preserve truthfulness of tone by keeping the picture tones in about the same relative proportions. We must make the lightest tone in the subject as light as possible in the picture and the darkest tone in the subject as dark as possible in the picture, and then get in as many varying tones as possible between these two extremes.

By using an exposure meter we can measure the intensity of the light that falls on the subject, but in estimating the proper exposure for a subject we must always take into consideration the range of tones in the subject — whether it is a long-scale subject or a short-scale subject.

For the short-scale subject, there is a definite exposure time that may properly be designated as correct exposure, but for a long-scale subject with an extended range of tones from very dark shadow to extreme highlight, there is no correct exposure. An exposure that would be correct for the darker shadows would be too long for the highlights and an exposure that would be correct for the highlights would be too short for the shadows.

So we often have to compromise and have to modify both the exposure and the development to get the kind of negative from which we can get the kind of print we want. That is what we mean when we recommend exposing for the shadows and developing for the highlights. The range of contrasts in the subject is an important factor that must always be considered, whether we use an exposure meter or not.

With the modern photoelectric exposure meter we can often actually measure the range of tones, sometimes described as the " brightness range," in the subject, and can regulate the exposure accordingly, for whether or not we have to compress the tones in the negative by exposing fully and developing carefully depends on the type of subject we are photographing and on the range of tones in the subject. If, for example, we are making a portrait and are using a rather soft, even lighting, falling on the face almost directly from the front, we will find that the gradations of light and shade on the face thus lighted are very delicate and the range of tones from shadow to highlight is quite short. In a case like that we must be careful to avoid overexposure or underdevelopment, because that would tend to reduce the contrast in the negative. We must expose correctly and develop fully in order to retain in the negative all the contrast that is present in the subject.

We sometimes find short-scale subjects outdoors. Occasionally the subject and the lighting conditions are such that there is no extreme brightness range from very heavy shadow to very bright highlights. " Gas Tank," Fig. 29, is an example of a short-scale subject. It is made up almost entirely of middle tones; there is little or no heavy shadow and very little highlight. For such subjects we must be very careful to expose correctly and develop fully, but, on the other hand, when the subject is one with a very long brightness range from sunlit white clouds to deep shadows, we often have to compress the scale of tones so that we can get the two extremes within the limits of the printing paper.

In Fig. 30, " Empty Benches," there is contrast without chalkiness. The white marble benches in sunlight are shown in the picture with a little, delicate gradation that indicates the texture of the marble. If these light tones were as white as the paper on which the picture is printed, the suggestion of marble texture would be entirely lacking. As it is, the white marble in sunlight is truthfully depicted as white marble and has its characteristic texture. Then, too, in the original of this print there is a trace of detail in the deep, black shadows between the marble benches; it is solid black only in places. Extreme contrasts of black and white — even in a subject of this type — are seldom a truthful representation of the tones in nature.

The exposure may often need to be varied according to the artist's desires. He may want to increase the contrasts or reduce the contrasts in the subject, and he can do so by controlling the exposure and the development of the film. A short exposure and full development will tend to increase the contrast in the negative, and therefore a short exposure and long development is recommended in the case of a short-scale subject in which there is very little contrast. On the other hand a full exposure and short development will tend to lessen the contrast in the negative and is recommended in the case of a long-scale subject with an extreme brightness range. In this way the range of contrast in the negative can be compressed and shortened so that it will correspond to the range of tones in the printing process.

" Gas Tank," then, is a type of subject — a short-scale subject with a limited brightness range — that calls for a correct exposure and full development so that none of the rather limited contrast in the subject may be lost in the print. " Empty Benches " is a type of subject that has an extreme brightness range, with very bright highlights and dark shadows. In dealing with a long-scale subject like this we often have to reduce the range of tones in order to bring it within the limits of the printing paper, and to do this we give a full exposure and we avoid overdeveloping the highlights.

When using a filter, it will be found that variations in the exposure, in addition to modifying the contrasts in the negative, will also affect the color correction. A short exposure will tend to increase the color correction. In Fig. 2, " Florida Beach," there is some overcorrection and the blue sky is reproduced considerably darker in tone than it really was, yet the filter used in this case was only a Kodak Color Filter, which is about the same as a K2. The color correction was increased because the exposure was short. In Fig. 9, " Gloucester Fishermen," too, there is considerably more color correction than would normally be obtained with the filter that was used. The exposure was made looking down from a high wharf and the short exposure tended to overcorrect the water, which was reflecting blue light from the sky very strongly.

Practically speaking, the securing of truthful tones in a photograph depends almost entirely upon the exposure. Development has very little to do with it; development determines the contrast and, by varying the time of development, we are enabled to lengthen or shorten a little the range of tones in the negative, but the correctness or otherwise of the tones depends very much on the exposure. We have to expose for the tones we want; if light tones predominate in the subject and are what we want to reproduce in our picture, we must time the exposure to give gradation and quality in these light tones. If we want shadows, we must expose for the shadows. Overexposure followed by overdevelopment will tend to block up the highlights, and underexposure will result in empty shadows without detail or gradation. Correct exposure will give the maximum gradation in both highlights and shadows. It is in exposure and development that the artist can control his results considerably; he alone is responsible for the tones and gradations in his picture and in order to render them correctly, he has to learn, first of all, to see them in the subject and then to reproduce them correctly in the photograph.

I would urge the beginner in pictorial photography, however, not to be afraid of exposing fully on long-scale subjects, especially if he is using a medium-speed orthochromatic, " chrome " type film or a medium speed panchromatic film such as the Panatomic X, all of which have a tremendous amount of latitude. Correct exposure is of course the ideal to be aimed at, but of the two alternatives, over- and underexposure, while overexposure is bad, underexposure is a great deal worse.

I would also urge the would-be pictorialist not to depend entirely on his exposure meter, but to judge of his exposures by the results he gets. Even though the exposure meter may be quite accurate, there are so many other factors that may affect the final results that it is quite impossible to depend entirely on the meter readings. The only really correct exposure for the pictorial photographer is the exposure that will give him a negative from which it is possible to make the kind of print he wants.

CHAPTER V

LINEAR PERSPECTIVE

LINEAR perspective is the art of representing objects on a plane surface as they appear to the eye, and this is something that the pictorial photographer should understand, for, though it may usually be taken for granted that the lens will automatically render perspective correctly, we often see photographs in which the perspective appears to be anything but correct.

Short and Long Focus Lenses.—The agreeable or disagreeable perspective given by a lens depends entirely on the point of view from which a picture is taken. The closer the viewpoint, the more abrupt the perspective will be, and a very near viewpoint with a short-focus lens will usually result in perspective that is rather violent. In extreme cases it may appear to be distorted. Though it is actually perfectly correct, such abrupt perspective is usually not at all pleasing.

There is a very prevalent idea that the use of a short-focus lens will give distortion, but if faulty perspective does result when using such a lens, it is because the lens was not used properly.

The eye is a long-focus lens, and it takes in only a very narrow angle of view, so, in order to be able to see as much as can be included by a wide-angle lens, we have to move the eyes and look at the various objects in succession. Therefore, when we examine a photograph that was made with a short-focus lens from a rather close viewpoint, the angle of view and the amount of subject material that is included in the picture make it appear to be somewhat unnatural, but we can usually correct the unnatural impression by adopting a more distant viewpoint, so that the angle of view is not quite so extended.

As an example of the misuse of a wide-angle or short-focus lens, let us take the classic example of the horse and wagon in which the horse's head is shown very large and the wagon is apparently very small. With a short-focus lens we can get such a picture from a very near viewpoint, with the horse's head so near and the rest of the subject diminishing in size so abruptly that the horse's head appears to be distorted. But, strictly speaking, that is actually the way it looks from a very close viewpoint and if we could really see that horse and wagon perfectly objectively — just as the lens sees them — they would look just as they do in a picture taken very near to with a wide-angle lens.

It is the too-near viewpoint that causes the apparent distortion, and the use of a long-focus lens merely obviates the necessity for getting very close to the subject. It is the enforced more distant viewpoint that makes the perspective appear to be more natural rather than the greater focal length of the lens and we could get exactly the same result with the wide-angle lens by taking the picture from the more distant viewpoint (the same distance as we had to adopt when using the longer focus lens) and then enlarging part of our picture to make it just the same size as the picture made with the longer focus lens.

When photographing certain objects *from the same viewpoint* with lenses of varying focal lengths, the size of the objects will vary, but, as long as the distance between the lenses and the objects photographed remains unchanged, the relative size of the various objects to each other will be unchanged.

The only reason why a short-focus or wide-angle lens is needed in architectural photography is because it is often impossible to get far enough away from a building to include all of it in the picture, when a long-focus lens is used. Here is another instance of the need for compromise that has been referred to elsewhere. When it is necessary to include a certain amount of the subject — the entire height of a building or a rather wide angle in an interior view — and it is impossible on account of physical restrictions to adopt a more distant point of view, the only alternative is to use a wide-angle lens with the resulting rather abrupt perspective. It may be stated that, as a general rule, in pictorial photography a fairly long-focus lens should always be used whenever it is possible.

A rather long-focus lens is especially necessary in portraits and figure studies when we often want to get a fairly large image, but do not want to place the camera too close.

Suppose we are making a portrait and are using a two-inch lens on a miniature camera using 35-mm film. If the camera is about ten feet from the subject, we shall find that the figure is quite small in the finder and the head, of course, is very small. If we want to make the head larger, so that it will nearly fill the film area, there will be two courses open to us: we can move the camera nearer to the subject, or we can use a longer focus lens.

Unfortunately, the first is what is usually done, with the result that we get unsatisfactory perspective, not because we are using a short-focus lens, but because we have adopted a viewpoint which is too near. The lens is not at fault; the bad drawing is caused simply by its being too near. This is true not only of portraits but of all kinds of subjects, but it is usually more objectionable in a portrait because a much foreshortened hand, arm or shoulder is usually very noticeable.

We should always remember, then, that distortion and abrupt perspective are not the result of using a short-focus lens, but are caused by placing the camera too close to the subject in the endeavor to get a larger image. If we are satisfied to make the exposure at a distance from which the perspective looks about right and then enlarge a little more if the image on the negative is too small, we will never have any difficulty about perspective.

Suppose we are photographing a landscape such as a tree with some hills in the background, with a two-inch lens on a one by one and one-half inch film. We see in the finder that the tree is quite small and does not nearly reach the top of the picture area, though the general arrangement of the scene itself looks all right from where we stand. So we move nearer to the tree, until it more completely fills the finder space and is more imposing in size. If we then make the exposure from that nearer viewpoint, we may find that in the resulting print the tree may be a better size but the distant hills will be very small in relation to the tree and the whole distance will appear to be dwarfed and insignificant.

This effect is caused by a wrong viewpoint having been selected and if we had made the exposure from the more distant point and then enlarged the whole picture a little more to make the tree the size we want, we would have had a more pleasing result.

It must be understood that the focal length of a lens is relative to the size of the camera on which it is used. The customary two-inch lens that is used on cameras making negatives on 35-mm film — negatives that measure about one by one and one-half inches — is a lens of normal focal length for that size picture, but a lens of 135 mm (about five and one-half inches), used on the same camera, would be considered a long-focus lens. Yet the same five and one-half inch lens would be a normal focal length if it were used on a three and a quarter by four and a quarter camera. So if we make an exposure with a three and a quarter by four and a quarter camera that is fitted with a five and one-half inch lens and then, in making the enlargement, we use only a small part of the three and a quarter by four and a quarter inch negative — say a portion of it that measures only one by one and one-half inches — that would be exactly the same in effect as if we had used a long focus, 135-mm lens, on a 35-mm film.

If the pictorial worker will bear in mind the fact that the viewpoint rather than the focal length of the lens determines the perspective of his picture, he will usually prefer to get his original image small, and then get the required size by enlarging from a selected part of the negative, rather than get the image larger by getting too close.

That is about all a pictorial worker really needs to know about linear perspective, for he can trust his lens to produce correct perspective even when, in architectural work, it is placed so close to the subject that there is some decided convergence of lines that would ordinarily be considered to be parallel. In the case of a high building seen from so close a viewpoint that you have to put your head well back in order to look up at it, the vertical lines really do appear to converge to a vanishing point in just the same way as railroad tracks and other horizontal parallel lines converge to a point. But it has become a convention to think of vertical lines as being parallel and appearing parallel in a picture. This is because the elements of mechanical perspective were developed by workers who dealt with moderately high buildings, except for occasional towers, but frequently of great length. When seen at reasonable distances, no lack of vertical parallelism was apparent. There was little need for three-dimensional linear perspective until the advent of cities of skyscrapers.

Of course, if a tall building is seen from a sufficient distance so that it can be viewed without having to crane the neck and can be photographed without having to tilt the camera, the vertical lines will appear to be parallel vertically. So here, as in other instances, it is a close viewpoint that causes distortion or apparent distortion, for it is really perfectly correct. This sort of realistic rendering of vertical lines is often found in pattern pictures such as "Radio City," Fig. 32, where the parallel vertical lines converge towards the base of the building, and it gives a rather interesting rhythm.

Distortion of Lines and Values. — Sometimes distortion of perspective is necessary in a picture for the sake of emphasis or for some other equally good reason. The very popular and often interesting " angle shots " depend for their interest largely on distortion. Sometimes it is quite desirable also to falsify values in order to emphasize what is intended to be the main object of interest. A white building in sunlight often may be effectively emphasized by darkening the sky tones quite considerably, so that the white building will stand out prominently as in Fig. 6. In Fig. 2 " Florida Beach," the sky was deliberately darkened by giving a rather short exposure with a filter — and also by a little extra darkening of the upper corners in printing — in order to attract the eye up to the clouds and to counteract the importance of the figures which attract strongly because of their human interest. And in " Running In to See Mr. Lincoln," Fig. 3, the sky tone in the upper right hand corner was darkened in printing for just the opposite reason, namely, to give more prominence to the little figure on the steps. In an uncontrolled print of this subject there is a triangular patch of sky in the upper right hand corner that is rather light in tone and that attracts the eye rather strongly towards that upper corner. By darkening that light area, the little figure gains in prominence.

Distortion of lines and values which is done indiscriminately and without any valid reason, but just for the sake of being different, is not generally desirable.

Simplicity. — A very desirable quality in a picture — any picture — is simplicity. By being simple, a picture usually gains enormously in strength and effectiveness.

It is often rather difficult to make a photograph simple, especially in outdoor work where there is so often a jumble of unrelated objects that are very difficult to avoid. When there are too many prominent lines, either actual lines or suggested lines, they lose their force and fail to convey the desired impression. Sometimes, by carefully selecting a suitable point of view, we can mass the objects together and thus simplify the pattern of the picture to some extent, and we can also very often isolate an important object by including just as little as possible in the picture. A great deal can be done when making the print towards eliminating unnecessary material, for we can trim the print quite ruthlessly until it includes only just as much as is needed to tell the story.

The series of prints shown in Fig. 33 shows how a picture can be simplified and made more effective by leaving out what is not needed. Print A shows the falls as seen from the concrete bench from which it is supposed to be viewed. But by including so much of the surroundings the impressive height of the falls which is fifteen feet higher than Niagara is entirely lost. So I climbed down to the base of the falls to get a lower viewpoint, but even that was not sufficient to give the desired effect. In making the final print it was necessary to use only part of the negative, trimming off the sky entirely. Here again, as in other examples, the figures help to give scale.

Simplicity of subject is very largely a matter of selection. Simple subjects with good, definite lines are often the ones that make the most attractive pictures and, though they are not always easy to find, they can be found by one who is trained to see them.

Of course every worker will have his own preferences in the choice of subject matter, but though this may be varied, each in his own particular line should take care that the subject of the picture, whatever it is, is simple.

Sometimes certain conditions of atmosphere, such as a slight haze or mist that subdues the distant planes, will help to simplify a subject and we have seen how we can often increase this effect slightly by not using any filter, so that irritating detail in the background or in the distant planes can be blotted out.

In portraiture and figure studies, there is very little excuse for lack of simplicity, for the subject and its arrangement are almost entirely under the control of the artist. If the background is not simple enough, he can make it so. The face is usually the main object of interest in such a picture, and if the face can be seen easily and without having to search for it among a number of equally prominent, though far less important, details, the picture will make a stronger and more direct appeal.

The propensity of the lens to include too much is one of the important things to guard against, and the photographer has to curb this propensity in every possible way, yet there are many photographers who have not learned to appreciate the strength, effectiveness and restfulness that may be obtained in a picture by ruthless elimination of the unessentials.

Closely allied to simplicity is a quality that can perhaps best be described as restraint. Restraint is shown in the avoidance of overelaboration, and restraint also leads the artist to avoid subjects and methods that might be displeasing to others. Pictures of bits of distorted human anatomy and of the front and rear ends of a hippopotamus may be amusing, but they are not very dignified and their interest is ephemeral.

Choice of Subject Matter.—This is almost entirely a matter of personal preference and is governed largely by individual likes and dislikes. We all tend to photograph subjects that interest us. Franklin I. Jordan, for instance, is very fond of animals and has made a number of outstanding pictures of animals of which "Cockers," Fig. 24, is a typical example. Other workers like outdoor landscapes at all seasons of the year. There are many pictorialists who are interested primarily in people and who therefore confine their pictorial efforts exclusively to portraiture and figure studies.

From the purely pictorial point of view, it matters little what the actual subject of a picture may be, for its artistic interest depends more on how the subject is treated than what the subject actually may be, and the would-be pictorialist is urged to follow his own preferences in the matter of subject selection rather than copying someone else. Pictorial photography is primarily an opportunity for self-expression, and an artist can express himself only when he is dealing with a type of subject in which he is interested. In this connection, too, it is a mistake for a pictorial photographer to try and make the kind of pictures that he thinks will please a salon jury. Make your pictures in your own way—to please yourself, not in a way that you think someone else will like, and when you do this, you will select the kind of subjects that you like and will treat them in the way you think is right and proper.

If the making of a pattern or design is your objective, you will find that your interest will not necessarily be confined to any one particular type of subject. Almost anything, animate or inanimate, can be used if all that you are concerned with is the arrangement of masses, spacing, pictorial balance, and so on. While it is true that such more or less abstract pictures may be very successful for exhibition in photographic salons, they have a rather limited appeal and do not find as ready a sale to magazine and newspaper editors as do the pictures that have subject interest. But such considerations need not influence a pictorialist.

There are ample opportunities for self-expression in pictorial photography, for almost any subject or type of subject may have pictorial interest, which depends more on suggestion than on literal representation.

Emphasis.—The placing of the subject in the picture space and the selection of a high or a low viewpoint is often a valuable means of emphasizing the main object of interest. By the selection of the viewpoint we can raise or lower the horizon line. Thus if the sky or a tall object such as a tree or a building is to be emphasized we can make this very evident by placing the horizon line quite low in the picture space as has been done in Fig. 1, "An English Lane," Fig. 2, "Florida Beach," and in Fig. 42, "Cape Elizabeth." But if the important part of the picture is below the horizon as in pictures of reflections in water or similar subjects, we can select the viewpoint so that the horizon line is definitely above the center, as in Fig. 8, " Wet Water," Fig. 12, " Surf at Bass Rocks," Fig. 13, " White Swan," Fig. 20, "News Building," Fig. 28, " Sailing," Fig. 37, " Evening Shadows," Fig. 41, " Wander Bird," and Fig. 43, " Thunder Over Amalfi."

CHAPTER VI

Applying the Rules

IN portraiture and figure studies, it is important that the rendering of the gradations of tone should be correct, or at least appear correct. The tones on the face in a portrait should suggest the color — for black and white can suggest color — and in order that this may be so, the tones should correctly reproduce, not only the general tint and gradations of color, but also the gradations of light and shade necessary to give modeling, roundness and solidity.

Portraiture. — The general tone of the face is modified to a large extent by the key of the picture and by contrast with the background. In a portrait with a predominance of dark tones — dark clothing and dark background — the face and hands, being the only light areas, will appear lighter by reason of the contrast with the dark tones. On the other hand, if the prevailing tones are light, for instance, light clothing and a light background, the contrast will tend to make the flesh tone appear darker. This is more a matter of exposure and development, and of correct timing in printing, than of lighting, but the modeling of the face, the gradation of highlights, halftone and shadow which indicates the shape of the features, is purely a matter of lighting.

The head is round and solid, and the aim in lighting should be to suggest its roundness and solidity by means of highlights, halftones and shadows, so that it will look round instead of flat. The draftsman can suggest relief by the skilful drawing of lines, but the photographer depends upon shading for the relief and modeling of the features.

The first and most important thing to do, then, is to learn to see lighting. This sounds obvious, but there are really very few people who can see shadows and halftones on the face, unless they have cultivated the ability to do so. When lighting, or perhaps, more correctly speaking, shading, can be perceived and appreciated, the adjustment of the light to get pleasing relief and roundness is a very simple matter.

To get the maximum modeling and a full range of tones, the face should be lighted from one side and slightly from the front, so that the light falls on the face at an angle of approximately forty-five degrees. Then the only problem is to photograph it with sufficient technical skill, so that the gradations of tone and the modeling will be correctly rendered in the picture. This is merely a matter of correct exposure and proper development and printing. The tones are correctly rendered in the print only when the gradations of light, halftone and shadow are reproduced in their proper relation to each other.

When the face is in shadow against a white background, the flesh tones will look comparatively dark, and they must be so represented in a picture to preserve truth of tone.

When we come to deal with sunlight in outdoor portraits, we have to overcome the tendency to get too much contrast of light and shade.

Harsh, chalky highlights and dense, black shadows do not suggest sunlight, but only underexposure and overdevelopment. The suggestion of sunlight is conveyed by the fact that the cast shadows have a definite edge and outline, and that there are patches and spots of light on the face, rather than a gradual blending of light and shadow, but the patches and spots of light must be luminous rather than dense and chalky, and we must still be able to see color and flesh tints both in light parts and in the shadows. In Fig. 34, " All Wet," there is a quite convincing suggestion of sunlight, but no loss of gradation and skin texture.

The whole secret of success in sunlight effects is full exposure, followed by not too much development. This will usually give a satisfactory negative and one that will give a good print. The tendency to cut down the exposure because the light is very bright must be avoided, because we have to expose for the shadows, which are comparatively dark, and must allow for the fact that the subject is " close up " and that the shadows are, therefore, not modified to any appreciable extent by the atmosphere.

The modernistic trend in portraiture as shown in the uncompromising realism of skin textures, the fantastic shadow effects from hat brims and other adjacent objects, the eccentric placing in the picture space and the close-up trimming which leaves only part of the face in the picture, may be interesting and stimulating, although such tricks are often obviously nothing more than an effort to attract attention and to be different at all costs. That sort of thing, like other evidences of so-called modernism, I believe, is only a passing craze that will die a natural death as soon as it has run its course.

The excellent technique that must be acquired in order to reproduce skin textures with such startling vividness cannot but tend to raise the general standards of appreciation of the possibilities of photography and lead to a better understanding of its application to portraiture.

It seems to me that the wave of modernism that is sweeping over present-day pictorial photography is very largely due to a natural desire to " get ahead " of the other fellow. Someone makes a picture showing some interesting curves of part of a spiral staircase, and someone else goes him one better by placing his camera on the floor in the center of the spiral, looking up, and thus getting the entire corkscrew effect. Then the only thing to do in order to be different is to get a similar view of a spiral staircase, looking down from above instead of up from below.

Then someone makes a portrait in which the head very nearly fills the picture space and the next fellow has to go a little farther than this, so he enlarges the face still more, till there are just the eyes, nose and mouth in the picture, without any outline of the head. And the next step is to photograph just one eye and make that fill the entire space. And so it is with tall buildings that lean and converge to a vanishing point. They have been photographed from below, from above and from almost every possible angle. It seems rather like a game where each one is trying to " stump " the other fellow.

It is true that if the sole aim of the pictorialist is to make a pattern or pictorial design that fills the picture space in an interesting and pleasing manner — and that is a quite worthy objective — he will find endless possibilities for novel effects by photographing unusual subjects from unexpected angles. As essays in space filling these things are very helpful and they afford excellent training in photographic technique. In spite of the fact that they are being hung in representative salons and are being reproduced in some of the pictorial annuals, there is some question as to whether they are pictures or just " stunts."

" Gas Tank," " Empty Benches," " Power," and " Radio City " Figs. 29, 30, 31 and 32, are all of this type, but each of them has been quite successful in photographic salons and it is a lot of fun to make pictures like this.

Pattern.—Pattern or design in picture making is an important attribute of pictorial composition. A pictorial design must not be confused with the symmetrical, all-over pattern of a wallpaper or an Axminster rug. Pictorial design is a matter of filling a space with a pleasing and well-balanced arrangement of lines and masses. It is hard to describe or to define, because it is so largely a matter of artistic feeling and cultivated good taste. But if the picture space is filled in such a way that one feels that the shapes of the masses are completely satisfying, and that the sweep of line is stimulating and agreeable, then the result may be considered to possess some pictorial merit. However, a picture that is entirely lacking in subject interest and that depends for its interest solely on values of tone, line and mass, can never furnish more than a transitory satisfaction. One has to go a little farther each time and make each such picture a little more startling in order to get any satisfaction, and this is what has led to the far-fetched and utterly grotesque absurdities that are often perpetrated in the name of modern photography; the use of a negative image instead of a positive for the final picture, and the utter lack of restraint in choice of subject and in the treatment of it that make it seem as if the maker of that photograph were trying to see how far he could go along the lines of unconventionality.

Landscape Work.—Probably landscape work is more often the first choice of the budding pictorialist than any other branch of photographic picture making, and it offers a wide field for the exercise of imagination. Nature's moods are many and varied, and there is ample scope for individual treatment. The chief point to bear in mind is that a simple subject is usually more permanently pleasing than one that is too complex. The selection of suitable atmospheric conditions is of great importance, for the "interpretation of a mood" can only be effected when there is obvious evidence of the existence of the particular mood. There can be no definite rules given as to what these conditions are to be. Nature is interesting at all times, but, as a general rule, very harsh and glaring sunlight, when the sun is high in the heavens, should be avoided, because at such times there is often an utter lack of relief, roundness and modeling in the trees and other objects.

Good shadows can best be secured when the sun is low, and when one side of all objects is more strongly lighted than the other. Sunlight coming from one side gives the maximum of relief, and the long shadows of the early morning or late afternoon are often very beautiful and decidedly interesting.

The aim of the artist is to produce an illusion, and the more nearly a picture corresponds to nature, the more complete the illusion. Exact imitation of every detail will not produce as striking an illusion as will a picture in which such things as relief, distance and movement are vividly suggested, and in which the artist has generalized these essential qualities. The illusion of relief, as we have seen, can best be produced when the lighting is such that one side of an object is more strongly illuminated than the other, as when the sun is low and towards one side. The illusion of opening distance is suggested when the atmospheric conditions are such that the distant planes are less clearly seen than those near at hand.

In a landscape picture there should usually be at least two distinct planes represented; often there are three, the foreground, the middle distance and the distance. Sometimes there is no extreme distance in a picture, but only foreground and middle distance, while occasionally the foreground may be merely a silhouette of a portion of a tree or a branch projected into the upper part of the picture, or rushes by a river bank at the bottom edge of the picture.

The illusion of distance is a matter of selection of suitable conditions of lighting and atmosphere. Early morning or late afternoon in the summer is usually a more suitable time for picture making than those times of the day when everything, near and far, is equally distinct and clear-cut. The slight haze or mist that is often present early or late in the day is very helpful in differentiating the different planes in the scene. Full exposure and careful development, not carried too far, will preserve truth of tone in distant planes. Sometimes a suggestion of depth and space is given by the introduction of an open doorway or the arch of a bridge in the foreground, with a distant view seen through it. Distance may also be suggested by a river, a stream or a road winding away into the background, and thus linear perspective will help in creating the illusion. Occasionally such an effect is produced in a snow scene by a track of footprints going off into the distance. Linear perspective, the diminution in the size of objects as they recede into the background, will give a suggestion of distance, but this, in itself, is not sufficient, and the effect must be increased by the illusion of flattened tones and less decided contrasts.

A landscape picture is distinguished from a topographical record in that it affords a suggestion of some emotion, and the beauty of the picture depends upon the truthfulness with which an interesting aspect of nature is represented. Truthfulness of representation does not necessarily mean microscopically sharp definition and a profusion of fine detail, but, rather, the exact interpretation of a mood of nature. Grace of line, interesting spacing, truthful tones and the attributes of beauty that are understood to be experienced in the contemplation of a pleasing pattern or design, are qualities that are essential in a work of art. The production of a landscape picture, considered as a separate branch of art, is regarded by some as being on a lower plane than the making of pictures which include the human figure, because in a landscape picture the artist can produce only sensorial and not intellectual beauty and, furthermore, because some of the highest qualities of beauty in nature — grandeur and sublimity — can be suggested only to a very limited extent in a picture on account of the necessity for representing the scene on a very much reduced scale.

But, on the contrary, I am inclined to think that pure landscape of the romantic type is really one of the most difficult of all subjects for the pictorial photographer. It demands not only skilful photographic technique and a complete appreciation of the possibilities of photography but also long continued and careful observation and study of natural phenomena in order to be able to reproduce in the print approximately true landscape and sky values.

This is a knowledge that can be gained only by intelligent and thoughtful observation over a long period of time and under all kinds of varied conditions. The direction of the light, the time of year and time of day, the presence or absence of wind and many other conditions will affect the contrasts in landscape tones and the relative value of sky and clouds. Sometimes the cloud shadows are darker in tone than the blue sky; sometimes these cloud shadows are very delicate and are lighter than the general tone of the sky. Reflections in water also call for careful study. When the surface of a lake or the ocean is ruffled by a breeze, it is usually lighter in tone than when the surface of the water is smooth and even. The reflection of an object such as a white sail in the water, as a rule, would be a little lower in tone than the object itself. Distant tones and those in the middle distance are subject to change according to prevailing conditions. Only an artist who has put in years of careful study should attempt to tamper with landscape values or work-in clouds in a bromoil print. There are many landscapes made by ambitious pictorialists that are obviously lacking in truth in their tones and values and yet it is often hard to tell just what is wrong. In a delicate, high-key subject a very slight falsification of values is quite enough to spoil the whole picture.

In pictorial landscape work, the possibilities in the way of interpretation are necessarily very largely dependent upon a fortunate combination of circumstances. We have to be there at just the right time, when the lighting is right and when other uncontrollable conditions are propitious, if we want to express a mood, and there are so many things to be considered that it is not very often that all of them are exactly right.

As a matter of fact, some of the highest qualities of beauty in nature, such as grandeur and sublimity, can often be suggested very effectively by the introduction of human or other figures to give scale. Some of Cesare Giulio's pictures of snow-covered mountains with very small figures give a very vivid suggestion of tremendous space. Actual magnitude of the print itself is rarely needed to suggest either of these qualities, for the element of space can be suggested very adequately. A general haziness and flattening of tones in the far distance will often convey a suggestion of depth and spaciousness.

Suggestion is a most important element in picture making. In landscape pictures, in which we will include also marine and still-life studies, the success of the picture depends entirely upon the effectiveness with which certain emotions and sensations of beauty are suggested. Composition, the mechanics of suggestion, is the means by which we achieve beauty in a landscape picture. We cannot improve upon nature, but we must curb the prolixity of nature. We must condense and simplify, must select just what will give a suggestion of the emotions which led us to think that the material before us would make a satisfying picture.

When we select an architectural subject for our picture we will find that here, too, there is often a definite need for simplification and careful selection if we want the result to be a picture rather than an exact representation of a building or part of a building. In Fig. 19, " Sun on the Roof," the theme of the picture was sunlight and therefore it was necessary to emphasize that by including very little else besides the sunlit roof and by making the effect of sunlight quite obvious. Architectural subjects, by the way, both interior and exterior offer interesting opportunities for arrangement of lines and masses and for the reproduction of textures. Here — more perhaps than in any other type of subject — there is very particular need to strive for the utmost simplicity in the use of the material.

Emphasis of one particular feature is usually necessary; it may be a graceful line, or it may be an interesting mass, but for the proper enjoyment of a picture, this one predominant feature should be given full sway, and should not be weakened in force by the introduction of other interests.

In landscape work, the need for broad and impressionistic treatment is strongly indicated. The softening of obtrusive detail, the massing of light and shade, are often necessary for the purpose of simplification. There is a sense of freedom and satisfaction to be derived from long, flowing lines and broad, simple masses. Such pictures wear well and are easy to live with. So we cannot too strongly emphasize the importance of simplicity.

In a broad sense all artists are impressionists; they do not picture the objects themselves, but only what they are conscious of seeing. There is no virtue in elaboration. The artist, and more especially he who uses a camera, must endeavor to be not a mere recorder of external facts, but one who forms a vivid mental impression and tries to make us realize his impression. The interpretation of a mood is more to be desired than a bald statement of fact.

The simplification of a picture begins with the selection of the subject. We feel by instinct, or we have learned by experience, that a certain arrangement of line will induce certain emotions. In a portrait or still-life study, we can actually arrange such lines as we feel are needed in the picture, but we cannot thus arrange the lines of a landscape — we can only select. The same impulse that suggests arrangement will also suggest selection.

A certain amount of mechanical construction and ingenuity is needed in composing a landscape picture. The artist must try to see lines and masses as forming part of a pattern, not as actual objects. The line arrangement, the pattern or design of the picture, can be modified very considerably by changing the point of view from which the picture is taken. We aim to produce certain illusions capable of stimulating the involuntary sensation which we name pleasure, and these illusions, as we have pointed out in this and previous chapters, are produced very largely by the arrangement or selection of certain lines, tones, and distributions of light and dark.

There are certain mechanical principles underlying the production of such illusions. These principles are what we strive to understand when we study perspective, both linear and aerial, and when we consider the advisability or otherwise of using panchromatic films and filters.

There are laws and rules governing the production of a picture, as of all works of art. The musician must understand and obey the rules of harmony and counterpoint, the writer must study the correct use of words and the proper construction of sentences, and the picture maker, whether he be a painter or a photographer, must keep in mind the principles governing the mechanics of suggestion, on which his pictures depend.

It must not be understood, however, that picture making of any kind, whether it be painting, drawing or photography, is a matter of exact compliance with hard and fast rules; this is not the case at all. There are certain recognized methods in making pictures that have been universally adopted by artists of all times, and thus have become crystallized into principles of composition, but it will be found that picture making is almost entirely a matter of good taste, and that it is largely instinctive when the taste has been trained and cultivated. If a photographer can compose at all; if he can make pictures that are pleasing to himself, and that are regarded by competent judges as being interesting; if he can make pictures that suggest to others the impressions that he himself felt when he arranged or selected the material, he will do so even if he has never heard of any rules. When he has made the picture, he will find that, on analysis, a reason can almost invariably be given to explain why a certain impression is conveyed, and why the picture makes the appeal it does. It may be because there are graceful or forceful lines in the picture; it may be on account of decorative masses or a delicate *nuance* of tone; it may be that the picture starts a train of thought and appeals to the imagination; but it can appeal only to those whose tastes and instincts are similar to those of the artist. If some people can see nothing in a picture, if it means nothing to them and makes no appeal, it does not necessarily follow that the picture is at fault. They may not have the requisite imagination or taste to understand the picture. It is just the same in music. Some can enjoy a Tschaikowsky symphony, while others can appreciate only swing.

I think many pictures are made entirely by instinct, and that the rules and principles can be tacked on afterwards. This probably will explain why there are pictures that we like, but that seem to conform to no rules. To " study up " on composition and then go out with the camera and a set of rules, with the idea of making pictures, does not seem to me to be at all the way to do it. It is, of course, very necessary to read and assimilate the rules and principles of picture making, but when you are actually making pictures, forget all about the rules and principles, and rely on your own good taste and judgment.

I do not believe that the ability to compose successfully can be learned entirely from books; it is a matter of good taste and judgment, cultivated and improved by the study of good pictures, and by the habit of looking for and expecting to see beauty in every phase of nature. The natural and inherent good taste of an artist is possibly an unconscious knowledge of the principles of composition. As soon as we become conscious of this knowledge, the good taste and instinctive feeling become judgment and selection. But the good taste must come first, for, unless an artist can compose by instinct, I do not believe he will ever learn to do it by rule. Learn all you can from the study of a large variety of good pictures. If a picture appeals to you particularly, try to analyze it and find out the reason why it impresses you as being beautiful or interesting.

To learn to see pictorially is the first essential duty of the would-be picture maker. It would be no use to learn from a book that the S-shaped curve, for instance, is a desirable line, if one cannot see and appreciate such a line in nature.

Good taste and judgment can be cultivated, as are other faculties, and the foundations of success as an artist are good taste and an appreciation of beauty. These must come first, and the ability to record impressions of beauty will follow later.

In landscape photography, the photographer must learn to see his subject as a pattern; he must look for lines and masses, and must learn to see them as parts of his design. The suggestion that is often given, to study the subject through a rectangular frame of blackened cardboard, is a very good one, especially for the beginner. The amount of subject included in the frame can be varied by changing the distance between the cardboard and the eye. In order to eliminate color, and to get an idea as to how a subject will appear in monochrome, it may be studied through blue glass or cellophane, or a viewing filter especially made for this purpose.

A tree is useful to the artist only when the direction of its lines is good, and the shape of the mass is satisfactory. The line of surf along a sandy beach may be a good line or a bad one, and the judgment and good taste of the artist will enable him to decide whether it is good or bad, just as his taste and judgment enable him to decide as to the shapes of the masses. The good taste must be cultivated until it becomes instinctive and reliable. The only way to do this is by studying and analyzing good pictures. Rules and laws of composition will not develop taste and judgment, they will only explain why certain shapes and certain directions of line are preferable to others, and give some assistance in establishing a criterion. If a study of composition were all that is necessary, every photographer and every painter could be an artist.

The quality of imagination is another very essential attribute of the artist. He conceives an idea and puts it into such form that it can be recognized by others. This is true of painting or photography, music or poetry. The greatness of the picture, the music, or the poem is governed by the quality of the imagination shown in its conception. Imagination is a natural gift that can be strengthened by study, and a photographer, gifted with a vivid imagination, who, by diligence and application, has acquired skill in the manipulation of his tools, can make pictures that will express to others just what he intends them to express. Imagination alone will not suffice to produce great pictures; there must be sufficient facility of execution to carry out the ideas in the artist's mind. Technical facility can be acquired by careful and intelligent practice. Imagination can be cultivated by the study of good pictures, and by the cultivation of the mind. Hard work is the secret of success in art as in everything else.

Knowledge and experience are the foundations upon which imagination can build. Years of hard work are necessary, but it is unfortunately hard to convince some students of the necessity for long and hard study. Many seem to be under the impression that inspiration will come to their assistance, and that genius will enable them to dispense with much of the labor which others, less fortunate, must undertake. Some mistake eccentricity for artistic merit, and think that a picture that is weird and unusual in subject or treatment is a worthy achievement. The unconventional, or, as W. H. Downes calls it, the "unexpected pattern," often makes a picture interesting, but eccentricity carried too far is annoying.

For some years I have had the interesting privilege of examining thousands of photographs sent to one of the leading photographic magazines for competition, and the conclusion has been forced upon me that by far the most common failing in photographic picture making is underexposure of the negative. The manufacture of ultrarapid film has tended to foster the idea that the shutter can be speeded up more and more until less than the minimum of exposure is often given. Films possess great latitude, it is true, but too short an exposure always has a tendency to cause a loss of atmosphere.

Of all photographic failings underexposure is the most serious, for it cannot be remedied in the darkroom, and an underexposed negative will never give the delicate tonal gradations that are so necessary from the artistic standpoint. The differentiation of the planes in the picture always suffers when the negative is underexposed, in spite of the utmost skill that may be exercised in printing. So the pictorialist must always watch the shadows, and must be sure to expose for the effect he wants. The success of the picture depends entirely upon the exposure; very little can be done in development to correct errors in timing, and it is the shadows that must be considered in judging the exposure.

There are very few shadows in nature that are absolutely black, except, possibly, in places where the air is very clear and the sunlight is very bright and glaring. Possibly the entrance to a dark cavern might truthfully be represented as black in a picture, but, as a general rule, there are detail and gradation throughout the shadows. In a subject lighted by electric lamps, the shadows would be hard, black and solid, and should be so represented in a picture. This would be quite correct. But the same subject in daylight would have entirely different shadows.

Moonlight scenes, so-called, that are made by underexposing in daylight, show their unreality by the hardness and blackness of the shadows. The shadows in moonlight are empty and lacking in detail, but they are never very dark. The contrast between the shadows and the lighted parts is much less in moonlight than under any other conditions.

The reason why there is this difference is that in daylight the shadows are illuminated by diffused light, in moonlight or electric light they are not. The contrasts in moonlight are very soft, whereas the contrasts given by electric light are very harsh indeed. This is why a much underexposed picture taken with the sun behind clouds can never be passed off successfully as a moonlight scene. The shadows are wrong. The underexposure has made them empty and lacking in detail, but it has also made them too dark, and the contrasts are too great for a real moonlight effect.

Sunrise and Sunset Pictures.—Pictures taken at sunrise or sunset, facing the sun, should be sufficiently well exposed to give some shadow detail and should be printed so that the detail is preserved in the print. The tendency usually is to give a short exposure with the idea of preserving detail in the sky, but the highlights must be left to take care of themselves, and the exposure should be sufficient to give as much detail in the scene as can be perceived by the eye.

In Fig. 39, "Sunrise," the detail in the shadows was preserved to some extent by using the Sterry process in printing in order to extend the tone scale as much as possible.

A sunrise or sunset picture is very rarely true to nature in values and contrasts. Almost invariably there are signs of underexposure, and they are often overprinted so that parts of the sky are rendered as black. Sometimes parts of the sky at sunrise or sunset are dark in color, dark purple, perhaps, or dark gray, but they are never black. Black clouds in a photograph never can be correct. Such subjects need full color correction and full exposure. From a practical standpoint as well as an artistic one, it will be found that a sunset and water combination is better than sunset over land. Exposure is difficult at that time of day on land, but the increased reflection of the water shortens the necessary time, and the reflection may add pictorially to the result.

With regard to night photography, the secret of success lies in giving just as long an exposure as will render as much detail as can be seen. Too long an exposure will register detail in the shadows that is not ordinarily visible, and the true night effect will be lost. In Fig. 14, "Winter Night," the exposure of three minutes at *f:* 4.5 has given plenty of detail except in the very darkest shadows, yet the effect of night is convincingly suggested.

Still-Life Studies.—In making still-life and flower studies the artistic worker has plenty of scope for the display of good taste, judgment and artistic feeling. The entire credit for the success of such pictures is due to the artist, for the arrangement of the picture from start to finish is absolutely under his control. In pictures of this kind the composition is wholly constructive. The photographer can build up the picture as he goes along, very much in the same way as a painter. He can select the material for the picture and can arrange it as he likes; he can study the effect on the focusing screen, and can make any changes he thinks are desirable until he gets it right. When he has everything as he wants it, he can photograph it and can use all the technical knowledge and skill at his disposal.

In arranging flower studies, the artist will do well to keep in mind some of the principles of pictorial composition referred to in the preceding chapters. He should strive to secure unity, harmony, balance and completeness. He should make his picture simple. He should endeavor to obtain good lines, decorative masses and a pleasing pattern or design. The rendering of tones and color contrasts must be carefully considered, and the technical work should be without blemish.

In order to secure graceful lines, only such specimens should be selected as possess this qualification, and only a few specimens should be used in the picture, otherwise the grace and beauty of each one will be lost. Grace and beauty of line are what the photographer must chiefly rely upon to make his picture beautiful, for he will lose the beauty of color. It will be found that in nature grace of line and sumptuous coloring are seldom found together. The photographer should utilize the quality he can best render in his picture.

Mr. Le Sage's comments on his picture, " Symbols of Autumn " reproduced as Fig. 40, are as follows: " A successful still-life study demands much of the artist. The faithful rendition of surface textures, ranging from the velvety softness of a flower petal to the hard brittleness of a glass vase, constitutes one of the most vital attributes of this branch of photographic art, and challenges the technical knowledge and skill of the pictorialist. But the still-life worker is confronted with other problems of equal or greater difficulty — a fact frequently unappreciated by those who have not given serious consideration to the matter — I refer to artistic conception and constructive composition.

"The majority of still-life studies find their origin in the minds of their makers — mental pictures or preconceptions. Next comes the task of locating suitable material to carry out the idea, if one is not fortunate enough to have it already available. Sometimes the crystallization of an idea must be deferred for several months, pending the availability of one single component part of the proposed study. Here is patience personified. Here is no happy, chance stumbling upon a subject which invites its capturing upon a sensitized film.

"As the title implies, I have tried in this picture to express the symbolization of autumn, by incorporating in it subject matter identified with the fall season — something, if possible, that would not only characterize the waning year but also be possessed of an inherent beauty. What could better meet these two qualifications than the chrysanthemums that brave the early frosts to prolong to the last the loveliness of our flower garden, and the grapes whose luscious beauty is accentuated as they hang in bunches from the vine?

"My favorite form of still-life composition is a combination of triangles and curves. Each basic type is satisfactory in itself but when the two are judiciously employed conjointly, the increase in variety and interest is apparent at once.

"The over-all geometric figure created by the entire subject matter of this picture, taken as a unit, is that of a triangle. An analysis of the flower arrangement will reveal many secondary triangles formed by combinations of three blossoms; the bunch of grapes is likewise suggestive of a triangle. In order to satisfy the instinctive desire for variety, and to soften the angularity of the triangles, curves also were introduced into the composition. The interrupted curves of the silver plate furnish this variation, as does also the top arc of the flower group, the curved line of which flows into that of the plate. Thus by either triangular or circular motion are the principal and balancing objects unified — each object in itself a symbol of autumn."

CHAPTER VII

THE TECHNIQUE OF PICTORIAL PHOTOGRAPHY

IN the preceding chapters we have considered some more or less abstract pictorial principles and the important part played by the imagination in the production and enjoyment of pictures. Very little information has been given that is definitely practical, and it has been taken for granted that the reader already possesses some photographic experience. There are, however, many to whom some technical suggestions may be helpful and so, in these final chapters, the abstract will give way to the practical.

Negative Developers.—As regards the best developer for negatives, any reliable developer, properly used, may be considered to be the best, and any worker who has experimented at all with different developers will probably have found one that he likes and is satisfied to use. Jumping around from one formula to another is unnecessary and futile, for there really is very little difference in the results obtained.

Metol, glycin, amidol, Rubinol, Rodinal, and others are all good, reliable developers that will produce excellent negatives of fine quality on any of the excellent films that are available today. *The most important factor in the development of a negative is the amount of development given to the negative*, and this is determined by the length of time during which the development is allowed to proceed and by the temperature of the solution, both of which should always be accurately determined.

There are some differences in the way that certain developers act, though this does not very greatly affect the final result, provided the time of development is properly adjusted. Metol, for instance, is one of the " soft-working " developers that bring out detail quickly and build up density more slowly. Hydroquinone is a developer of the opposite type: it brings out detail slowly and builds up density rather quickly. Therefore it will be found that metol is generally recommended as a developer for softness and delicate gradations, while hydroquinone is used in formulas that are designed for producing contrast. Amidol is a developer that works without the addition of an alkali.

The other chemicals that are usually found in a developing solution are sodium sulphite, sodium carbonate and potassium bromide. The sodium sulphite acts as a preservative and keeps the developer from oxidizing too rapidly. In some modern, fine-grain developers the sulphite is used in rather unusually large amounts and it is believed that the excess of sulphite actually dissolves a portion of the silver grain and thus makes the grain clumps smaller. Sodium carbonate is the accelerator; it opens up the pores of the gelatin and enables the developing solution to act. Some milder alkalis, such as Kodalk or borax, are often used in fine-grain developers instead of sodium carbonate, for it has been found that the action of an energetic accelerator tends to break down the walls of the tiny cells in the gelatin and thus enables the silver grains to form clusters which are what are seen in the negative and are described as " grain." For fine-grain development, therefore, it is advisable to use an excess of sulphite and to avoid using sodium carbonate.

Potassium bromide is used as a restrainer, to keep the developer from acting too energetically.

In view of what has just been stated, it will be obvious that the following developer, known as Ansco No. 12, will tend to produce fine-grained negatives as well as delicate gradation. This developer contains no hydroquinone and only a relatively small amount of carbonate.

Ansco No. 12 (Fine-Grain Developer)

Water	32 ounces
Metol	118 grains
Sodium sulphite, dry	4 ounces 70 grains
Sodium carbonate, monohydrated	85 grains
Potassium bromide	37 grains

Develop for eight to twelve minutes at 65° F.

Another excellent soft-working, fine-grain developer that will give excellent shadow detail is the Ansco No. 10 formula, which contains borax instead of sodium carbonate. This formula is:

Ansco No. 10 (Fine-Grain Borax Developer)

Water	32 ounces
Metol	10 grains
Sodium sulphite, dry	2 ounces 75 grains
Hydroquinone	13 grains
Borax	10 grains

Develop for twelve minutes at 65° F.

A developer recommended by Dr. Windisch carries this idea of reducing the amount of carbonate and of hydroquinone to the limit, and leaves them both out entirely. This developer is very satisfactory for those who like to get a delicate, well-graded negative with clean shadows and highlights that are not too dense.

Water	32 ounces
Metol	77 grains
Sodium sulphite, dry	1¾ ounces

The development time is from eight to twelve minutes at 68° F. This developer works well with Panatomic X film and with the very rapid emulsions such as Superpan Press and Panchro Press.

A standard and very popular borax formula for a fine-grain developer is the Eastman D-76 which is:

Eastman Borax Formula D–76

Elon or metol	30	grains
Sodium sulphite, dry	3¼	ounces
Hydroquinone	75	grains
Borax	30	grains
Water	32	ounces

Developing time, nine to twelve minutes at 65° F.

The Buffered Borax developer is a modification of the D–76 formula and it has been found to give exceptionally fine-grain results. It is:

Buffered Borax Negative Developer, Formula D–76d

Elon or metol	30	grains
Sodium sulphite, dry	3½	ounces
Hydroquinone	75	grains
Borax	120	grains
Boric acid, crystals	120	grains
Water	32	ounces

Developing time, same as D–76.

An improved ultrafine-grain developer giving a minimum emulsion speed loss and a much finer-grained image than D–76 is one that contains Kodalk and potassium sulphocyanate. This formula, can be used for rollfilms, filmpacks, cut films or plates:

Formula DK–20

Water (about 125° F.)	24	ounces
Elon or metol	73	grains
Sodium sulphite, dry	3 ounces 145	grains
Kodalk	29	grains
Potassium sulphocyanate (thiocyanate)	15	grains
Potassium bromide	7	grains
Cold water to make	32	ounces

Time of development, fifteen to twenty-five minutes in a tank at 65° F. according to the contrast desired. Decrease the time about twenty per cent for tray use.

Development times must be determined for the individual by making a few careful tests. The longer the development time — as a general rule — the greater will be the contrast in the resulting negative and the best " gamma " or degree of contrast to which to develop a negative depends on the printing process that is to be used in making the print. For enlarging, a rather delicate negative without too much contrast is generally desirable and the contrast may vary a little according to the type of enlarger that is to be used. A condenser enlarger tends to give a bit more contrast than an enlarger with a diffuser light system, and different papers also call for slightly varying degrees of contrast. For some of the excellent papers used in projection printing, such as Dassonville Charcoal Black or Gevaert Gevaluxe, a slightly more contrasty negative is needed than for some other brands of bromide and chlorobromide papers. So do not always adopt the manufacturers' recommendations as to the development time, but make a few tests in order to determine the time that best suits your own requirements.

The development of negatives for pictorial work should not be carried too far. What we need is a fairly soft, rather thin, negative with good gradation and no extreme density. There should be very few or no parts that are absolutely transparent; even the shadows should show some slight light action, and the denser parts should not be so dense that the gradations in the highlights cannot be printed. The negative must be adjusted to the printing process that is to be used — or the printing process selected according to the quality of the negative — and only experience will enable the worker to judge this correctly.

Remember, then, that contrast in the negative is largely determined by the time of development; the longer the time, the greater the contrast. Apart from that, development is very largely an automatic process and nothing is to be gained by inspecting the film during development. With the present-day, highly color-sensitive emulsions the only safe way to develop is in a light-tight tank, or in complete darkness for a definite period of time which has been determined by preliminary tests.

Bromide Enlarging.—With regard to printing, there are a number of excellent processes, each of which has its possibilities and limitations. Only two processes will be dealt with at any length, and these two processes are projection printing, or enlarging, on bromide, chlorobromide or chloride papers, and bromoil, which is a natural outcome of projecting printing, for a bromoil is made by the addition of hand-applied pigment to a bleached-out bromide enlargement, and thus depends very largely for its success on the quality of the original enlargement.

In bromide enlarging there is a lot of scope for control of the result, by actual manipulation. We can also select the surface and texture that is best suited to the subject—we can use either a bromide paper or a chlorobromide paper—and we can modify the result by dodging and shading. There are greater possibilities in straightforward enlarging than many people realize. Enlarging will give good halftones and gradation, if they are in the negative, and it will preserve photographic quality. There is a wide choice of surfaces and textures in enlarging papers, and many interesting effects may be obtained by enlarging through paper or through one of the celluloid texture screens now obtainable. The quality of this medium and the worker's absolute control over the size of the picture make enlarging an adequate process for the pictorialist, and it should not be lightly discarded for the more showy attractiveness of the pigment processes.

A picture is made by the selection of the subject and by the disposition of the lines, masses and tones rather than by manipulation in printing, and the qualities that make a photograph pictorial can often be secured by purely photographic means without a lot of manual manipulation of the negative or print.

Control must be exercised in making the negative — in the selection of suitable conditions under which to make the exposure — in the use or not of a filter — in the correct estimation of the proper exposure to give the desired effect. The artist in photography must be a sound technician and should avail himself as far as possible of purely photographic methods of controlling his results.

This idea of using straightforward photography for picture making with the camera is not a matter of being a purist (or a puritan). It is simply a question of using the chosen medium in such a way that its full possibilities are realized.

Some time ago there was a craze for organ playing on radio programs and in motion-picture theaters. The organist, as a rule, was quite a capable performer, but he was handicapped by the fact that the selections he played were not properly adapted to the instrument he was using. Because there were no appropriate organ compositions, he had to play on the organ a number of songs or music that had been written for the piano, and to play piano music on an organ is about as incongruous and unsatisfactory as mixing pencil sketching and charcoal drawing with photography. The sustained notes of the organ are so entirely different from the more staccato tones of the piano that the result of playing an obviously pianistic composition on an organ is very disconcerting to anyone who can appreciate the difference.

This is really a pretty good simile, because there are many people who enjoy hearing piano music played on an organ, and cannot understand why it is not perfectly appropriate. In just the same way there are many who do not see anything incompatible in a photograph made from a very extensively worked up paper negative.

There is no doubt whatever that straightforward photography is capable of giving eminently satisfactory results if properly controlled by careful selection of the subject, the point of view and appropriate weather conditions, by adequate exposure and suitable development of the negative and by careful printing in a straightforward photographic process.

Actual working details as to the making of an enlargement on bromide or chlorobromide paper need hardly be given here. Success in printing is a matter of craftsmanship and experience. Correct exposure, the selection of the right grade of paper to suit the negative, and skill in " dodging " are the chief factors in the production of a really successful print. Some get at the correct exposure by making one or more " test strips," some measure the strength of the light with a meter, but whatever method is adopted, correct exposure and full development are very important factors. Whether to use bromide or chlorobromide paper must depend on the result desired and on the quality of the negative. A chlorobromide paper will usually yield a longer range of tones than bromide, but bromide is capable of giving very satisfying results when it is used with an understanding of its possibilities and its limitations.

Toning. — Although for the majority of pictorial photographs, especially perhaps for those that may be described as pattern pictures, that depend for their effectiveness on an interesting arrangement of masses and tones, a black and white tone — either a cold blue-black or a black with a tinge of warmth in it — is generally most satisfactory, there are many pictures for which a warm brown or sepia or a cold blue-gray tone is more desirable. Sunlight can be suggested more adequately by printing on a cream tinted paper and toning the black and white image to a warm sepia color, and, conversely, a snow scene, an early spring landscape or marine picture will often be more effective if it is presented in a cool, bluish gray. Such colors or tints often help to accentuate the spirit of the picture, but, as a general rule, it is advisable to avoid strong colors such as bright blue, green or red. Various shades of sepia are quite easy to obtain on practically every brand of bromide or chlorobromide paper and there are a number of formulas available. Two methods of obtaining sepia tones most frequently used are sulphide toning and hypo-alum toning.

In sulphide toning the black image is bleached out with ferricyanide and bromide and then is redeveloped in sodium sulphide or some other soluble sulphide. The formula for the bleaching solution is:

Potassium ferricyanide....	1 ounce
Potassium bromide	1 ounce
Water	20 ounces

Prints that are to be toned by this method must be well washed to free them of every trace of hypo. If there is any hypo in the print it will form with the ferricyanide the well-known Farmer's reducer which will remove the image entirely so that it cannot be redeveloped.

Bleaching will take only two or three minutes and the prints should remain in the bleaching solution till the last trace of black has disappeared. They should then be rinsed in two or three changes of water and then may be redeveloped in the following solution:

Sodium sulphide	2 ounces
Water	5 ounces

Be sure that you use sulphi*d*e, not sulphi*t*e. This is a stock solution that should be diluted for use in the proportion of half an ounce of stock solution to ten ounces of water.

Other soluble sulphides may be used instead of sodium sulphide. Barium sulphide will give a somewhat cooler sepia color and it keeps better than the sodium salt. If barium sulphide is used, the following formula will be found to be satisfactory:

Barium sulphide	150 grains
Water	16 ounces

Another formula that is recommended for darkening the print after it has been bleached is:

Thiocarbamide (10% solution)	½ ounce
Caustic soda (10% solution)	1 ounce
Water to make	16 ounces

The use of thiocarbamide avoids the rather disagreeable odor of sodium sulphide, the fumes of which are apt to spoil sensitive materials.

It will be found that the exact color that is obtained by this method of toning will vary slightly with different makes of paper. As a rule it will be found that the faster papers, that is to say, the soft grades of bromide paper, will give a richer and warmer sepia than the contrast grades, and the chlorobromide papers will be slightly yellower than bromide papers when toned in this way. It must be remembered that a print intended for toning by redevelopment must be correctly exposed and fully developed and must be thoroughly freed from hypo before bleaching.

Hypo-alum Toning. — There are several formulas for this method of toning. A typical one is:

Hot distilled or rain water	128 ounces
Hypo	16 ounces
Alum	4 ounces

As a freshly mixed hypo and alum solution will tend to bleach and reduce prints that may be placed in it, it is necessary to ripen the bath by toning a number of waste prints in it or by adding the following solution:

Distilled or rain water	1 ounce
Silver nitrate	60 grains
Table salt (sodium chloride)	60 grains

Add this to the hypo and alum solution after it has cooled; stir the mixture thoroughly and allow it to stand till it gets cold. Then heat it to about 130° F. and allow it to cool again. When used for toning the solution may be heated to about 100° to 110° F. Do not filter this solution, but stir it before use. The older it is and the more it is used, the better it becomes. It may be strengthened from time to time by adding fresh solution. Toning will take from twenty minutes to half an hour. As this toning solution contains hypo, it is possible to tone prints as soon as they are taken from the fixing bath after a brief rinse in water, but many people find that a better tone is obtained by letting the prints dry after fixing and washing before they are toned.

Blue Toning. — A very pleasing soft grayish blue can be obtained on some chlorobromide papers by toning in gold chloride. Some workers recommend that the print to be toned blue be developed with adurol instead of the usual metol-hydroquinone developer. Adurol is also known as mono-chlor-hydroquinone and a suggested formula for the development of the prints is:

Adurol	32 grains
Sodium sulphite, dry	128 grains
Sodium carbonate	128 grains
Potassium bromide	4 grains
Water	16 ounces

For use, take one part of this stock solution to nine parts of water. Use an acid stop bath between development and fixing, and fix in a plain hypo solution that contains no alum.

For toning, the following three stock solutions are required:

Stock Solution A

Thiocarbamide	50 grains
Water	8 ounces

Stock Solution B

Citric acid	50 grains
Water	8 ounces

Stock Solution C

Gold chloride	15 grains
Water	8 ounces

For use, take one ounce of each solution and add ten ounces of water, making thirteen ounces in all which will be enough to tone three or four 11 by 14 prints in about twenty to thirty minutes. Though the mixed solution does not keep more than a day or two, the stock solutions will keep well.

There will be some slight intensification of the print when toned in this solution, so the best results will be obtained with prints that are just a little bit less brilliant than they should be before toning. The toning will add the needed crispness.

Sometimes a bromide or chlorobromide enlargement on a mat or rough surface paper will look much better when it is wet than after it is dry. When it is desired to bring back the richness of shadows and brilliance of the highlights seen in the wet print, this may be done by using wax or varnish on the print. There are preparations obtainable that are specially intended for this purpose, such as Probus print lustre, which may be rubbed on to the dry print with a soft cloth. Simoniz wax may be used, or Old English Floor Wax. The latter imparts a slight tinge of yellow to the print. Of course if a paper with a slightly lustrous surface is used, it is not necessary to apply this after treatment.

Bromoil.—Before taking up bromoil, it is necessary to learn how to make a really good bromide enlargement because, as the bromoil is really a bromide enlargement in which the silver image has been bleached out and replaced by an image in greasy ink, the quality of the bromoil depends very largely on the quality of the bromide enlargement. There are a few bromoil workers who can build up a successful picture from rather unpromising material and who can put in with the brush and eraser skies that are really convincing, but they are few and far between.

Bromoil is undoubtedly one of the most interesting of all processes for the pictorialist. It is not an easy process, and the very quality that makes it so useful to the artist, namely, the wide range of control that it permits, makes it a rather dangerous process in the hands of one who has not studied nature sufficiently to have acquired some appreciation of tone values.

The appreciation of tone values calls for long continued and careful observation of natural phenomena. The time of year, the time of day, the prevailing atmospheric conditions, the presence or absence of wind and many other things affect the values in a landscape. A cloud passing across the sky may modify these values very considerably. The general tone of the ocean or any large expanse of water depends upon whether or not its surface is calm or is ruffled by a breeze and this also modifies the character of reflections in the water. Sky values, too, need constant study, as well as the structure of clouds and their variations according to their position in relation to the horizon.

Therefore, it will be seen that to attempt to modify the tone values in a landscape or to work-in a sky in a bromoil print calls for considerable observation and knowledge and it is very easy to make mistakes. Nevertheless, bromoil is a very fascinating process and the pictorial worker should by all means strive to master it.

I would recommend, however, that before taking up bromoil, carbro or any other control process, the would-be pictorialist should give some considerable attention to bromide enlarging. There is a tendency sometimes to depend on the control that is possible in the pigment printing processes rather than the control that may be exercised in bromide enlarging.

Bromoil is generally regarded as being one of the " control " processes, but, while it is true that a lot of control is possible, bromoil can be a perfectly straightforward photographic process and a bromoil print can exhibit all the delicacy of gradation and subtle values of a good bromide plus the richness and depth that is added by the pigment that is stippled on the surface instead of being embedded in the gelatin.

One reason for the popularity of bromoil is the fact that it is a process in which a projection print is used and therefore it is a process that may be employed by the worker who makes only small negatives.

The principle of bromoil printing is just the same as collotype. The silver that forms the image in the bromide enlargement is removed from the emulsion by bleaching, and at the same time the gelatin is tanned and hardened in exact proportion to the amount of silver deposit that was present, so that, in the deep shadows, the hardening is complete while, in the halftones, there is more or less tanning action according to the depth of the original tones. Those parts of the picture where there was no deposit of silver are not affected by the bleaching and tanning solution and therefore the gelatin remains in its original condition.

When the bleached print is allowed to soak in water, the highlights — where the gelatin has not been tanned and hardened — will absorb water, but the deep shadows will not absorb water because the gelatin has been tanned in those parts. All the varying tones throughout the picture will thus absorb more or less water in proportion to the amount of hardening of the gelatin in those various parts. When a print is in proper condition for pigmenting, the gelatin will show a slight but distinct relief that can be seen and can be felt by passing the finger tips lightly over the surface. Where water has been absorbed, the gelatin will be slightly swollen and raised above the shadow portions and, therefore, when the surface moisture has been blotted off, and when a greasy ink or pigment ground in oil is applied to the surface of the print with a brush, it will be found that the pigment will adhere quite readily in those parts where the gelatin has not absorbed water and will be repelled from the highlights where some water has been absorbed by the gelatin. There is a selective action all through, so that the ink will adhere to the print in proportion to the amount of tanning and hardening that took place in the various parts of the picture. In applying the ink with the brush a lot of control is possible according to the way the brush is manipulated.

Bromoil has the reputation of being a difficult and tricky process. The only reason why it may be so is because it depends to some extent on the reaction of gelatin to varying temperatures, but otherwise it is a perfectly straightforward photographic printing process that can be mastered by any careful technician after a little experience. It is easier to get successful results if a bromide paper that is specially manufactured for bromoil is used. There are several very good imported papers and some of the surfaces of the American made Defender Velour Black are specially adapted for bromoil. These papers have not been hardened too much in the manufacture and therefore they will respond easily to the selective tanning.

The enlargement intended for bromoil should be one that is not too contrasty. It should have detail and gradation both in the shadows and in the highlights with no large areas of solid black. It should be the very best possible print that can be made from the negative, but should be perhaps a trifle softer than would be desirable in an enlargement not intended for bromoil, and, of course, any shading, dodging or other necessary corrections should be done in making the enlargement.

In making an enlargement for bromoil it is necessary to use a plain hypo bath for fixing rather than one that contains alum or any other hardener. The emulsion must not be hardened or it will be impossible to get the subsequent swelling of the gelatin that is essential. A developer for the bromide enlargement that is preferred by many bromoil workers is amidol, because it can be used without any carbonate. A good formula is:

Sodium sulphite, dry	¾ ounce
Amidol	50 grains
Potassium bromide	50 grains
Water	20 ounces

Develop for not less than two and one-half or three minutes, but adjust the exposure so that the print is not too contrasty. Fix in:

Hypo	4 ounces
Water	20 ounces

and then wash it thoroughly.

Although it is possible at this stage to go right ahead with the bleaching of the print to prepare it for pigmenting, it is advisable to let the print dry after fixing and washing, and bleach it later.

There are many different formulas for the bleaching and tanning solution, any of which would probably be very good. One that has been found to be very satisfactory is:

Copper sulphate, saturated solution	20 ccm
Potassium bromide, ” ”	8 ccm
Chromic acid, 1% solution	18 ccm
Water	600 ccm

Bleaching will take only a few minutes and should be continued until there is only a faint brownish tinge in the deepest shadows. When bleaching is completed, wash for about five minutes and then fix the print in:

Hypo	4 ounces
Water	20 ounces

to which may be added one hundred fifty grains of sodium bisulphite. After fixing for about five minutes, wash the print again for ten minutes.

At this stage the print may be allowed to dry and be inked up later, or it may be placed in warm water for a few minutes to get it into condition for pigmenting.

In this final soaking the gelatin will absorb some water more or less in proportion to the amount of tanning and hardening that has taken place so that, as has already been explained, the highlights will be slightly swollen and there will be a perceptible relief. By passing the finger tips lightly over the surface of the print it will be found that the swollen parts will be slightly slippery while the darker shadows will be a little bit rougher and harder.

The temperature of the water used in this final soaking will depend on the paper that is being used. Some papers will give the desired relief with an ordinary room temperature of from 65° to 70° F. Other papers may need to be soaked in water at a higher temperature before the proper swelling is attained. With the Defender Velour Black papers, a temperature of about 85° or 90° F. will generally be found to be about right. Start with a medium temperature of, say, about 70° to 75° F. and then, if that does not produce the required relief, raise the temperature of the water five degrees or so and soak the print for a few minutes in the warmer water. Do not raise the temperature too much at first. It is easy to increase the relief and swelling if necessary, but it is very hard to reduce it if it is too high.

When the gelatin has absorbed sufficient water and is ready for inking, place the print on a smooth surface such as a piece of smooth rubber sheeting, or a wooden drawing board covered with two or three sheets of wet newspaper and blot off the surface moisture with a clean, lintless towel, a viscose sponge or a piece of chamois. When the surface of the print is free from water, it is ready for pigmenting.

There are several varieties of bromoil ink that may be purchased at any of the larger photo-supply houses. Drem or Sinclair inks are good and are not expensive.

The best brushes to use are the regular " stag's foot " shaped bromoil brushes with the working surface cut on a slant. Do not use too small a brush. A large brush is much easier to work with and covers the print more quickly. For an eleven by fourteen print, a number 28 brush will be none too large. For smaller prints a smaller brush may be used, but too much time should not be spent on the inking. It should be done quickly and deliberately. Do not be afraid of putting on too much ink; it is easy enough to take it off except in the very deep shadows where the ink may become too thick. It is usually better to start in on a part of the print where there are no very heavy shadows and then ink the shadows after the brush is not freshly charged. It should not take more than ten or fifteen minutes to ink up an eight by ten print and not more than fifteen to twenty for an eleven by fourteen. Do not be at all alarmed if you get hairs from the brush or bits of lint on the print while pigmenting; they can all be rubbed off quite easily after the print is dry.

A little experience will be needed in acquiring the brush technique. Broadly speaking, a dabbing action of the brush in which it is placed on the print rather energetically, pressed gently and then lifted quickly, will deposit ink on the print. A " hopping " action, in which the brush is bounced against the surface of the print and is caught on the first bounce, will tend to remove ink and increase contrast.

Perfect smoothness can be obtained in the print, if that is desired, by going over the surface gently with the brush and working out all the graininess and sketchy brush work. When a smooth paper is used, it is easy to apply the pigment so smoothly and evenly that the final print has the even texture of a bromide print plus all the richness, depth and carrying power of the bromoil.

As a matter of fact, the bromoil worker has it in his power to get practically any effect he wants. He can get a sketchy effect by inking up quickly or he can smooth it out and get a smooth and even surface with beautiful gradations.

It is the tremendous possibilities for control possessed by the bromoil process that make it so interesting and at the same time rather dangerous in the hands of one who has not trained his eye to appreciate tone values. However, it is quite possible to ink up a print in a perfectly straightforward manner, so that the final result will reproduce all the tone values of the original enlargement. This is what should be done at first, for it takes some training and natural artistic perception to interfere with photographic tone values. It is quite possible, however, after some experience has been gained, to darken a foreground, to lighten the distance or middle distance and even to get a tone on a blank, white sky to serve as a foundation for clouds that can be worked-in comparatively easily with a stump or a piece of linen or chamois leather stretched over the finger tip.

If small, light accents are needed, such as highlights on the face in a portrait, they can very easily be put in after the inking is all done and the print is dry, by means of an eraser such as the rubber on the end of a pencil.

It is always best to begin the inking with a hard ink. If it is found that the hard ink does not take well in the lighter parts, it may be necessary to use the softer ink which will give more detail and better gradations. It depends on the amount of the swelling as to which ink is better. A high swelling necessitates the use of a soft ink. It is always possible to apply a soft ink over a hard ink, but is not so easy to apply hard over soft. If necessary, the ink may be softened by rubbing in just a trace of megilp or the regular medium sold for that purpose.

If, in inking up the print, you find that a shadow portion becomes too dark and that too much ink has been applied which cannot be " hopped " off, it is easy to lighten up that part by placing a piece of paper over that part and rubbing it down with the finger tips. Some of the ink will thus be transferred to the paper and then that part can be worked over with a dry brush to even it up and to remove even a little more of the surplus ink.

Do not hesitate to resoak the print, in cold water, if the inking does not seem to be going well. Sometimes, if the inking is prolonged, especially when working in a warm room or in the summer time, the print begins to get too dry so that even the highlights begin to take the ink. Just place the print in cold water and let it soak for a minute or two. Then take it out, blot it off carefully, and continue the inking. Even if the resoaking does disturb what work has been done, it will not matter because it can easily be evened up by working over with the brush again in the usual way.

As a rule cold water is used for resoaking, but if it should be found that the swelling is not sufficient, this can be increased by raising the temperature of the water up to 100° or 105° F. Do not do this, however, unless it is necessary, for it is not possible to correct too much swelling of the gelatin.

The final touches are best made when the print is dry. Highlights may be emphasized with the rubber, outlines corrected, and drawing, if necessary, added to the shadow area with a brush very lightly charged with ink. It often helps to rub the sky down gently with a soft cloth. Experience is necessary to make clouds look like clouds, that is, masses of vapor with delicate *nuances* and diversified lights and shades. It also requires some knowledge of the various types of clouds and their appearance with regard to the direction of light and their position in the sky. This acquaintanceship is most easily obtained by actual observation of cloud forms whenever the opportunity offers.

Finishing the Print.—When the picture is printed, there still remains a very important matter to be considered before it can be regarded as being quite finished. It must be mounted and, perhaps, framed. The function of a mount is to separate the print from its surroundings, to isolate it from other pictures, so that its beauties may be easily appreciated. The mount must therefore be quite unobtrusive and must not force itself upon the attention, or it will defeat its own end. Simplicity is the keynote in mounting, as it is in making the picture. Sometimes the mount may be decorated with a pencil line drawn around the print, but such a line, with perhaps a title and a signature is all that should ever be placed on the face of the mount besides the picture.

The size of the mount and its shape must be considered. The size must be governed to some extent by the purpose for which it is intended.

For exhibition purposes certain specified sizes are often called for. Mounts for exhibition pictures, like many other things, are now standardized and sixteen by twenty has become an almost universally recognized standard size for the mount for a salon print.

The position of the print on the mount is a question that is often puzzling. Here is a good rule that may safely be followed: make the top and side margins equal in width and the bottom considerably wider. Eccentric placing of the print on the mount is very seldom advisable; it only serves to draw attention to the mount, which is just what should be avoided as much as possible.

In the old days the picture was made first and then a mount was designed and made to suit the picture, but now the mounts are standardized and the pictures have to be made to suit the mounts. We have noted elsewhere the really rather remarkable difference in the apparent tone value of an area of rather light tone according to the tone of its surroundings. A patch of light gray tone on a white background will look much darker than a patch of exactly the same tone surrounded by black. In just the same way, a picture on a white mount will look slightly darker than the same picture would look if it were on a very dark mount. In the old days, if a print were just a little too light, we would put it on a white or very light toned mount and make it look a little darker, and if it were too dark, we would lighten it up by placing it on a dark mount. But now, white or light toned mounts are called for at practically all the salons and so we must be careful to make our prints light enough so that the contrast of the light mount will not make them look too dark.

Careful, skilful craftsmanship is essential in picture making, and strict attention must be paid to every detail. A picture can be spoiled by careless workmanship, just as a great composition in music can be spoiled by faulty execution. Technical details must be thoroughly mastered before the soul of art can be discovered.

In the matter of trimming a print, the principles of composition must often be observed. The size and shape of the picture are entirely matters of artistic judgment, and the artist should feel perfectly justified in cutting down a picture if it can thereby be improved in any way. As an exercise in space-filling, it is interesting to see how near one can come to making a satisfactory composition that will just fill the film that is being used, without any trimming. This is often hard to do, especially if the picture maker has a keen appreciation of spacing. Even if the makers of plates and films are obliged to make their sensitive material in certain sizes, so that they will fit certain cameras, the artist is bound down by no such regulations, and can make his pictures any size he pleases, being guided only by considerations of artistic arrangement. Often we find that the subject we select will occupy only a portion of the film, and then it is better to make the picture small and take it from the right point of view, rather than make it bigger by getting too close.

In trimming a print, the artist must be guided to some extent by the position of the main object of interest. This, as we have seen, should usually be placed about one third of the width of the picture space away from one side and the top or bottom of the picture. Often it improves a picture to trim off part or all of the sky. Sometimes the foreground is bare and uninteresting, and may well be dispensed with. Such things as these should always be considered to be of greater importance than trying to make the picture a certain shape so that it will fit a certain-sized mount. The mount must be made to fit the picture rather than the picture to fit the mount, and, therefore, the use of stock mounts with borders is rarely practicable.

In trimming portraits, the position of the head in the picture space must be carefully considered, for the apparent height of the sitter can be varied by trimming close or by leaving space above the head. When the head is near the top of the picture, we get the impression that the sitter is tall, and a certain dignity and importance is suggested. When the head is low in the picture space, it conveys a suggestion that the sitter is small. This is a matter of placing in the picture space, rather than trimming, but the same effect can be obtained by trimming, if necessary.

In picture making a good deal of practical common sense is needed, and the rules and principles should be regarded as guides, to be observed or disregarded as seems best. When a rule is broken, there should be a good reason for doing so, and the artist should know what he is doing.

It must be understood that in picture making the methods used by one photographer may be entirely unsuited to another. This must be so, or there would be little or no individuality in pictures by different artists. The principles referred to in this book are merely some of the fundamentals, and each artist must develop his own individuality, while still adhering more or less closely to these basic principles. I have endeavored to make clear to those interested in the artistic side of photography how the mechanics of suggestion can be applied in picture making. Such things as line, spacing, mass, balance, perspective, and so on, are just so many cogs in the machinery. How they are put together depends upon the ingenuity and skill of the individual. There is much to learn in making pictures. Only a little can be gathered from books. The greater part of the knowledge must consist of actual experience.

Sending to Photographic Salons. — Having made and finished some pictorial photographs, the question now arises — what are we going to do with them? One very popular and quite worthwhile use for such pictures is to submit them for exhibition in photographic salons. It may therefore be helpful to those who have never as yet submitted any prints to a salon to give a few suggestions as to how to go about it.

The first thing to do is to consult a list of forthcoming exhibitions that will be found in several of the popular photographic magazines. Here you will find the names and addresses of the organizing secretaries of practically all the open salons that are being held in every country. Select the salons that you want to enter and write to the secretary for an entry blank which he will be glad to send you. This blank will give full details as to how many prints may be submitted, size of mounts, date of the exhibition, closing date for entries and the address to which the pictures should be sent. There is usually an entry fee of $1.00 (for American salons) to be enclosed with the entry blank. Fill out the blank with your name and address, the titles of the pictures you are sending, and put your name and address on the return coupon which is usually attached to the blank, and then mail the blank, with the entry fee, to the salon secretary. The prints are sent in a separate package.

Pack the prints carefully and send them by express or parcel post, addressed as directed in the entry blank. There is often a printed label on the entry blank that may be used.

Two pieces of corrugated card, with the corrugations running in opposite directions, are usually sufficient protection for the pictures. My usual method of packing prints to be sent to salons is to cut from a full size sheet of corrugated board two pieces, one 20 by 30 inches and the other 16 by 30 inches. As the full size sheet measures 30 by 40 inches, these two pieces can be cut from it with a little to spare. These are each folded over along the corrugations, at both ends and then, when one is placed below and the other above the prints, they will form a strong and compact carrying case that will be really very durable. I have used the same boards for as many as seven or eight trips to salons and back and have never yet had any prints damaged in transportation. Wrap the package in stout wrapping paper and tie with string or seal with gummed paper.

There are special cases for salon prints on the market. These have strongly reinforced metal corners and are specially designed to hold four 16 by 20 prints. These are used by many exhibitors, but the corrugated board is less expensive and is really remarkably durable. It is customary for the wrapping materials to be carefully numbered the same as the prints, and kept in order when the prints are unpacked by the salon committee, so that the prints can be returned after the show in the same cases or wrappers in which they were received. So if you wish to use the specially-made packing boxes, you may be reasonably certain that they will always come back with the prints. Of course these cases should be clearly marked with the owner's name and address. Every print that is sent to a salon should be marked clearly on the back with the title of the picture and the name and address of the maker.

Besides submitting prints to pictorial salons, there are many other uses for them, some of which are more profitable to the pictorialist than salon exhibiting. At almost any time of the year there are contests and competitions for photographs for which very attractive prizes are offered. Pictures submitted to such contests should be of the very finest possible technical quality and artistic merit. The competition is quite severe and only the finest pictures will be successful. In such competitions, especially, perhaps in those organized by some of the biggest newspapers, it is important to remember that human interest, story or news appeal is a rather essential requirement and is more desirable than abstract artistic qualities that would not appeal so strongly to the general public. But, naturally, an interesting subject may be greatly enhanced by being presented with as much artistic beauty as possible, so there is plenty of scope here for the use of pictorial composition as well as good craftsmanship.

Individual circumstances will no doubt suggest many other uses for pictorial photography.

CHAPTER VIII

About the Pictures

THE average worker always seems to be considerably interested in technical data of pictorial photographs and therefore it may perhaps be desirable to try and explain not only how some of the pictures in this book were made but also — as far as can be ascertained — why they were made and why they were selected to illustrate the principles of pictorial composition discussed in the preceding chapters.

First of all I must confess that in the case of my own pictures I cannot be sure that the technical data are exactly as stated in every case, because I do not keep any detailed records of exposures, lens apertures, time of day and so on at the time of making the exposures. Often I find it necessary to work quickly in order to get a certain effect without delay. There may sometimes not even be time to check the light conditions with an exposure meter. In the case of "Running In to See Mr. Lincoln," Fig. 3, and "White Swan," Fig. 13, it was a matter of choosing just the exact instant when the little boy in Fig. 3 and the swan in Fig. 13 were in exactly the right place. It is true that in the case of Fig. 13 I had to wait a long time before the swan decided to swim over to the place where I wanted it to be, but I had to wait with a finger on the shutter release, prepared to make the exposure instantly.

So in some cases I have had to guess at the data, but that is really not as impractical as it may seem, for the details given probably are just as helpful to others, for they are what I would consider to be right if I were trying to make a similar picture of the type shown and under similar conditions today. They are what I would use in the light of past experience.

I seldom use an exposure meter of any kind, except occasionally a meter or an exposure table or calculator that has been sent to our publishers as a sample for us to test. It is not that I disparage the use of such aids, for a good meter or exposure calculator is a very important and often very necessary accessory for many photographers. In my own case, however, I find that it is usually perfectly satisfactory to rely on an ability to estimate exposures approximately correctly that has been acquired by thirty years' experience. Most of the pictures that are here shown are outdoor snapshots that do not present any difficult exposure problems. The lighting in practically every case was the usual outdoor lighting that would be expected to prevail and its intensity and actinity according to the character of the subject, the time of year and time of day, were not at all difficult to estimate more or less correctly.

There is, for pictures of this type, very seldom an exact, " correct " exposure. There is what might be described as an " adequate " exposure that will give a perfectly satisfactory negative, provided, of course, the development time is properly determined.

I would, however, strongly urge a beginner to use a good, reliable exposure meter until his judgment has been sufficiently trained by accumulated experience so that it has become dependable. The experienced craftsman, after working along the same lines for a considerable time, may find that he does not need to use a meter except for unusual subjects or unusual lighting conditions. The careful worker will learn by actual experience what results he will get with different lens apertures and different shutter settings on his own particular camera, for it will readily be understood that a certain setting of lens or shutter on my camera may well be different from similarly marked settings on your camera. The age of the camera is just one of many variable factors that must be considered in comparing such data. There have been many instances where a photographer has bought a new camera and has taken it on an extended trip without checking his exposures only to find on his return that practically all the exposures made on the trip were too short because the shutter was newer and possibly more accurate than the shutter on the older camera which was tending to slow down a little on account of the slightly slackened tension in the springs or a slight amount of friction that had developed in the shutter blades. I have found in my own case that the shutter and aperture settings that I use on my fifteen-year old 3A Kodak are not the same as regards the results they give when compared with similarly designated settings on a Rolleiflex and a Plaubel Makina camera that I have been using in the last few years. Therefore it is advisable always to take such data as are here given with due regard to the possibility of some nonagreement with your own experience, for your shutter may not be exactly the same as mine.

"AN ENGLISH LANE," Fig. 1, is an old picture, the negative of which was made a good many years ago in England. It never seemed to "click," though I felt that it had some possibilities, enough, at any rate, to make it advisable to keep the negative. The main defect in a straight print appeared to be a lack of interest in the sky and this was remedied by making a bromoil and adding a suggestion of cloud forms with an eraser. The negative was made with an Adams Reflex camera, 3¼ by 4¼, fitted with a Cooke lens. Using a Barnet Red Seal plate, the exposure was — probably — 1/25 second at *f*:8 and the negative was developed in pyro-acetone. The bromoil print is on Defender Velour Black, made according to the directions given in Chapter VII. The message to be conveyed by this picture is height and spaciousness — plenty of open air.

A similar idea was intended to be conveyed in "FLORIDA BEACH," Fig. 2. This was made on Daytona Beach in Florida in the summer of 1937, on a day when there were some splendid cumulus clouds that are so frequently seen in Florida in the summer. The exposure, using a 3A Kodak Special fitted with a Kodak anastigmat *f*:6.3 lens and Agfa Plenachrome rollfilm, was 1/50 second at *f*: 11 with Kodak color filter. The enlargement was made from a vertical section measuring about 3 by 2½ inches out of the 3¼ by 5½ inch negative.

"RUNNING IN TO SEE MR. LINCOLN," Fig. 3, was also made with the same 3A Kodak on Agfa Plenachrome film with an exposure of 1/50 second at *f*:8, using an Agfa No. 1 filter. The idea was to emphasize the massive and imposing columns of the Lincoln Memorial by the contrast in the size of the small boy running up the steps. I was waiting on the parapet, all ready to make the exposure, when I noticed the child coming up the steps and I waited till he got into the right place. Luckily there were no other people in sight at the time, so the little figure is emphasized by his isolation. In making the print the triangular patch of sky in the upper right hand corner was slightly darkened in tone in order to make it less conspicuous.

"THE SCOUT," by Julian Smith, Fig. 4, is a strong and impressive portrait. The lighting brings out the rugged modeling of the face and figure very effectively. There is luminosity in the deepest shadows and gradation in the highlights. This picture shows a dramatic rendering and an insight into character that renders it outstanding, a quality seen in all of Dr. Smith's portraits. No exact details as to exposure, etc., are available.

"JUDITH," by John Hutchins, Fig. 5, is an excellent foil to Dr. Smith's picture and is an outstanding example of high-key portraiture. The delicate modeling in the face is well suggested and the picture is delightful in its simplicity and effectiveness. This portrait was made with an Agfa 5 by 7 view camera fitted with a Zeiss Tessar 10 inch lens. The exposure was two seconds at *f*: 16, by artificial light, on Defender X.F. Panchromatic film.

"THE LIGHTKEEPER'S HOUSE," by Frank R. Fraprie, Fig. 6, is decidedly modern in the selection of the subject and in its treatment. It is refreshingly simple in tones; the white building stands out very strikingly against the darkened sky. Yet the building is not dead white; it is delicately differentiated in tone from the two or three whiter objects in the picture, namely, the mast, the little white post in the ground at the lower right hand corner of the house, and the chimney, all of which are just a bit lighter in tone than the main portion of the house. The echoing shapes of the two gables make an interesting line, and a very interesting point is the quite obvious roundness of the lighthouse building on the left of the picture which is brought out most effectively by the light on its further edge reflected by the white building, thus emphasizing the contrast of the adjacent shadow. The two dark rectangles of the windows provide a pleasing dark accent to relieve the monotony of the light tones. This was made in Bermuda with a Super Ikomat B, *f*: 2.9 Tessar lens, Agfa Plenachrome film. The exposure was $\frac{1}{25}$ second at *f*: 8 with Zeiss light yellow filter, at 4 P.M. in August.

"SEMI-LUNAR," Fig. 7. This is one of the many hundreds of thousands of photographs made at the New York World's Fair in 1939 and 1940. In it is recorded an ephemeral effect of lighting that could be secured only at a certain time during the day. There were several things to be considered; the edge of the shadow had to be in just the right place, and the people had to be pleasingly grouped and not too many of them. The idea was to emphasize the brilliant sector of light against a dark sky, so the exposure had to be short enough to give the desired contrast. This was one of the happy occasions when it was possible for the camera to secure instantaneously a transitory effect. A photographer often has to depend on good fortune in being in the right place at the right time, but he must be able to recognize such good fortune when it presents itself. Made with the Plaubel

Makina, 2¼ by 3¼, exposure in August at 10:30 A.M., 1/100 second at *f*:11 with a medium filter, the Panatomic-X film was developed in the Dr. Windisch metol formula.

"WET WATER," Fig. 8, was made at Noank, Connecticut, the fantastic reflections of the dory in the water being the motive. By rendering the textures convincingly — which photography can do so well — the wetness of the water is strongly suggested. It will be found that in making pictures of this type it is advisable to select a viewpoint as close to the water as possible as this will tend to bring out the water reflections more strongly than a higher viewpoint because there is less light reflection from the sky. This was made with a 3¼ by 4¼ Graflex, 2B Tessar lens of 8¼ inches focal length. The exposure was 1/25 second at *f*:8 on Plenachrome cut film which was developed in Agfa No. 12 metol formula. An Agfa No. 2 filter was used behind the lens.

"GLOUCESTER FISHERMEN," Fig. 9. The rather unusual perspective of this shot is due to the high viewpoint. It was taken looking down from a high wharf, with the camera pointed almost vertically downward. The dark tone of the water was caused by a rather short exposure being given through a yellow filter, so that the blue light reflected by the water from the sky above it was almost entirely eliminated. It was necessary to hold back the water a bit in printing this, which was done by cutting an opening in an opaque card. The opening was exactly the shape of the boat, and the card was held between the lens and the easel so that the boat and the boys in it received a little extra exposure. If the water had been allowed to print darker, the shadow or reflection of the wharf and the boat in the water would have been lost. This was made in Rockport, Massachusetts, with a 2¼ by 3¼ Plaubel Makina camera, Anticomar *f*:2.9 lens, 1/50 second at *f*:11 with a "medium" yellow filter, Agfa Plenachrome film, developed in Agfa No. 12 formula.

"IS IT NOTHING TO YOU? ", Fig. 10, is an example of a record photograph made interesting because of the prevailing weather conditions. This crucifix was erected by the Catholic Women's Club of Richmond, Virginia, to commemorate the first English Catholic settlers in Virginia. Nearby rests the remains of Colonel Giles Brent, deputy governor of Maryland, 1648, Margaret and Mary Brent, who settled at Aquia in 1647, George Brent, King's Attorney General, 1686, Member House of Burgesses 1688, who petitioned for and obtained on February 10, 1686, from James II, King of England, a proclamation of religious tolerance for all people settling in the Colony of Brenton. The crucifix is of bronze, is thirty feet high and weighs nine tons.

The title of the picture is from one of the arias in Stainer's oratorio, "The Crucifixion," the words of which are: "Is it nothing to you, all ye who pass by?" In this picture the crucifix was placed exactly in the center because in this particular instance, there is no other place where it could go, and of course it is of sufficient importance to merit being so located in the picture space. The negative was made with a 6 by 6 Rolleiflex, with Zeiss Tessar lens. The exposure was 1/50 second at *f*: 8 with light yellow filter, on Agfa Plenachrome film, developed in Agfa No. 12.

"Staten Island Ferry," Fig. 11, was made from the stern of a ferry boat just starting across to Staten Island. Another ferry boat was just coming in. A Halie texture screen was used in making the projection print in order to enhance the slightly hazy effect and to make the rather even tone of the sky a bit less monotonous. It was made with the 3A Kodak. An exposure of 1/100 second at *f*: 8 was given with a Kodak color filter on the lens, using Agfa Plenachrome film which was developed in Agfa No. 12. The print is from a portion of the 3 ¼ by 5 ½ negative measuring about 2 ¼ by 3 ¼.

"Surf at Bass Rocks," Fig. 12, is another rather old picture, made some years ago when the semi-achromatic lenses were more popular than they are now. The quality of definition obtainable with that type of lens is very pleasing and another advantage is the apparently greater depth of focus that is obtainable with them. This is because there is no plane in which the definition is critically sharp and therefore the falling off from sharpness to less sharp definition is less abrupt and therefore much less noticeable than it would be in the case of a more fully corrected lens. As a matter of fact, the definition and the depth approximate rather closely to that obtained by the use of a pinhole, but the lens is not as slow as a pinhole. This shot was made at Bass Rocks near Gloucester, Massachusetts. The exposure was 1/40 second on a Standard Orthonon plate with a light yellow filter. The camera used was a 3¼ by 4¼ Graflex and the lens was a nine-inch Spencer " Port-Land " stopped down to about *f*:11. Photographs with this peculiar definition or lack of definition are always very difficult to reproduce so that the real quality is retained in the halftone. There is a similar falling off in quality in Figs. 16 and 21.

" WHITE SWAN," Fig. 13, was made in Central Park, New York, with a 3¼ by 4¼ Graflex camera, 2B Tessar lens, with an exposure of 1/40 second at *f*:8 on Standard Orthonon plate. It was necessary to wait for some time till the swan was in the right place.

" WINTER NIGHT," by Edward Alenius, Fig. 14, is an example of the ability of the lens to pick up detail that is scarcely visible when a rather long exposure is given. The exposure in this case was 3 minutes at *f*:4.5 at 8 P.M. in January. Though there is quite a lot of detail visible in the buildings and in the foreground, the winter night effect is quite clearly conveyed. The temperature at the time of making this picture was 10 degrees below zero. The camera used was a 9 by 12 Miroflex fitted with a Zeiss lens and the orthochromatic film was developed in M-Q.

" BUDDING CONTENDERS," by Adolf Fassbender, Fig. 15, is referred to in detail on page 43 where Mr. Fassbender gives details of its production. It is an interesting example of the posed genre in which the subjects appear to be entirely unaware that they are being photographed. There is a naturalness and an utter lack of camera consciousness that is very delightful and the arrangement of the picture material shows careful planning. There is pictorial balance on the principle of the steelyard; the small object — the boat — at a greater distance from the fulcrum, balancing the larger mass — the group of boys — nearer the center. This was made with a 2¼ by 3¼ Makina camera fitted with *f*:2.9 Anticomar lens. The exposure was 1/25 second at *f*:8 on Agfa Super Plenachrome film.

"THE EXPLORERS," Fig. 16, is an example of the other way of making a genre group, namely, by sneaking up and photographing them unawares and without any deliberate posing. This was made some years ago with a Smith semi-achromatic lens, series I. There is a pleasing suggestion of separation of planes without any very noticeable difference in the definition. Made in March with traces of snow still on the ground, with 3¼ by 4¼ Graflex camera. The exposure was 1/25 second at *f*:9 on Standard Orthonon plate.

"A CONNECTICUT HILLSIDE," Fig. 17, is another example of the suggestion of great open spaces by the introduction of objects of known size. It is simple in composition, and though it is by no means a striking or imposing picture, it is restful and satisfying. Made with 3A Kodak, 1/50 at *f*:11 on Agfa Plenachrome roll film with Kodak color filter. The film was developed in Agfa No. 12 formula.

"AN AMERICAN BOY," Fig. 18, is a high key portrait with rather strong shadows. It has been suggested that this should be cropped a little from the back and the bottom in order to bring the head further to the right and to have more space in front of the face than behind it, but I like it better as it is. To me the upward and forward thrust of the head suggests the "up and coming" American youth striving to get ahead. This was made with a 4 by 5 Korona view camera fitted with a Graflex back to take the 3¼ by 4¼ Graflex focusing panel and holders. The lens was a

9-inch Cooke Anastigmat used at *f*: 8, and the exposure by artificial light on Super-sensitive Plenachrome cut film was 1/10 second. The film was developed in Agfa No. 12.

"Sun on the Roof," Fig. 19, was made at Avon Old Farms, a boys' preparatory school at Avon, Connecticut. The idea was to emphasize the sunlight and to make it the theme of the picture. This was made with the 3A Kodak with *f*:6.3 Kodak Anastigmat lens. The exposure was 1/25 second at *f*: 11 on Agfa Plenachrome roll film, with Kodak color filter. The film was developed in Agfa No. 12.

"News Building," Fig. 20, shows a modern skyscraper photographed from the Chrysler Building in New York. The white building in sunlight stands out strongly against its darker background and is depicted with uncompromising realism. The converging of the vertical lines towards the bottom is due to the high viewpoint and is perfectly correct. This was made with a 6 by 6 Rolleiflex, with Tessar lens stopped down to *f*: 11. The exposure in sunlight was 1/50 second with medium yellow filter, and the film was developed in Agfa No. 12.

"Sumac Lane," Fig. 21, shows early morning haze in Gloucester harbor. It was made with the Smith semi-achromatic lens, series I, one of the first lenses of this type to be made. The quality of definition when using these lenses can be varied by changing the aperture. The smaller the aperture, the sharper the image will be, but even with a very small stop one does not get the sharp definition of the anastigmat lens. In this case the lens was used at *f*: 11 and the exposure was 1/25 second on a Standard Orthonon plate used in a 3¼ by 4¼ Graflex camera. A light yellow filter was used on the lens.

"Winter Eve," by Gustav Anderson, Fig. 22, is an example of the skilful selection of viewpoint and lighting conditions to make a well composed picture from rather commonplace material. Mr. Anderson's comments on this picture when it was reproduced in the 1939 *American Annual of Photography* are that "when traveling north on a dull day toward a skiing trip and photographic vacation he saw this group of buildings and decided that it had pictorial possibilities, but that it needed sunlight. So on the first opportunity he returned and, coming around the barn to a spot he had previously selected, he saw immediately that he had a good picture. The composition seemed to be perfect and everything seemed to be in its right place, so all he had to do was to rig up the camera and make the exposure." It has been said that landscape photography is very largely a matter of luck and that success can be assured by just happening to be in the right place at the right time. But this is only partly true, for there must also be the ability to recognize the fact that conditions are just right and there must be technical skill and experience in order to take full advantage of favorable opportunities. Mr. Anderson's ability to recognize the fact that "the composition seemed to be perfect and everything seemed to be in its right place" and his selection of the right place at which to rig up his camera were important contributions to the success of his picture. This was made with a 9 by 12 Linhof camera, fitted with a 15 cm Tessar. The exposure at 4 P.M. in February sunlight was 1/10 second at *f*:16 with a K2 filter. The Kodak Verichrome film was developed in D–76 to make a contrasty negative, which was enlarged on Vitava Opal with some extra printing on the sky, and developed in glycin.

"A STUDY IN NUDES," by Charles Shannon, Fig. 23, is a very clever and highly original picture with a lot of subject interest. The maker of it states that "the idea for the picture was the result of one of those happy accidents which make photography so interesting. My wife and I were looking over some pictures when my wife noticed one of my daughters trying to imitate one of the poses. She said, "There's your picture," and it *was* four dozen negatives later." It was made with a 4 by 5 Korona view camera equipped with a Goerz 7-inch Dagor lens. The exposure was a quick bulb by artificial light at *f*:22. The Defender H. G. S. film was developed in D–6, enlarged on Velour Black and developed in D–65. Considerable dodging was done to get highlights and bring out details.

Franklin I. Jordan comments on "COCKERS," Fig. 24, as follows: Difficulties, which are plentiful anyway when photographing animals, are about quadrupled when you make a portrait of two animals instead of one. You have to get them pulling together so that the two bodies will make a single mass. You have to get them looking at each other, or in the same direction. If their bodies are pulling apart or they are looking in different directions, your picture will have a very obvious lack of unity. You have to get both animals lighted so that one does not throw the other into the shade. And you have also to get them both in focus at the instant of exposure, which is no mean accomplishment with two squirming pups.

Backgrounds are the first, and one of the most important considerations in all animal pictures. If you cannot get one to enhance your picture, at least it must be unobtrusive. In this case the background was a large sheet of black artificial leather with the sun shining on it so that it photographed a dark gray, throwing the light colored bodies into good relief, but not looking like an empty void. The background was suspended from the top and brought down and under the pups without fold, so that there would be no hard line separating the background from the support.

This picture was taken in full sunlight and the subjects so posed in it that they got the conventional forty-five degree lighting. The shadows in this glaring light looked hard and jumpy, quite out of keeping with the silky softness of the furry little bodies, so a Photoflood light in a reflector was placed on the ground in such a position that its light struck the subject at right angles to the sun's rays, and at such a distance that it did not kill the shadows but slightly softened them.

A 6⅜ inch lens was used to give good drawing, and even with that the camera was placed so far back that the image covered only about one quarter of the negative. Distortion ruins many animal pictures and the only way to avoid it is to keep the camera well back from the subject. The lens was stopped down to *f*: 5.6 which the mirror of the Graflex showed was the widest opening that would give acceptable definition over the whole set-up, critically sharp on the faces and extended paws, and falling off pleasingly behind them. This allowed an exposure of about 1/90 second, which was just about a minimum for stopping motion on the little bodies which were already beginning to pant under the heat of the sunlight, but allowing no leeway for any greater body movement.

After all these preparations and calculations, we were ready to make a simple snapshot of a couple of dogs. All that remained was to keep them in focus and on the background, with amiable expressions, for a ninetieth of a second, which doesn't seem like much of a stunt when you are telling it.

"SUMMER," Fig. 25, was noticed while driving through Pennsylvania on a bright but hazy July morning — that is to say, the landscape part of it was noticed but the sky was entirely devoid of cloud forms. However, an exposure was made on the landscape with the 3A Kodak with the idea in mind of adding some clouds later. Then, a couple of days later and a good deal farther south an exposure was made at about the same time of day and in about the same direction to get some suitable clouds, not too heavy and not too distinctly emphasized against the sky. These two negatives were used to make a combination print, the landscape from one and the sky from the other. It was just a matter of carefully blending one into the other and was not nearly as difficult as it is often thought to be by those who have never done anything of the kind. The important thing to notice when combining negatives in this way is to have the sky and landscape agree as regards lighting; both must be lighted from the same direction. For both negatives a 3A Kodak Special was used and Agfa Plenachrome rollfilm. The exposure for the landscape was 1/50 second at *f*:8 without a filter and for the sky negative the same exposure but with a light yellow filter, both being developed in Agfa No. 12.

"The Frozen Stream," Figs. 26 and 27, by George F. Slade and Frank R. Fraprie. Here are two pictures of the same subject both photographed under very similar weather conditions but from a slightly different viewpoint. In both pictures we see the brilliant light and shade of sunlight on snow with darker tones in the water and in the wooded background, but the line arrangement and the pattern of the picture are different. One conclusion we can draw from these two pictures is that there is generally, though not always, a possibility of getting more than one successful picture of an interesting subject of this kind and, by looking around carefully, studying the subject from different points of view, and making a series of exposures, we can often get several acceptable pictures. Figure 26 was made with a 9 by 12 Recomar camera with Kodak Anastigmat lens and the exposure at noon in February was 1/25 second at *f*:11 in bright sunlight with no filter on Panatomic film developed with metol. Figure 27 was made on Plenachrome film with a Goerz 3¼ by 4¼ rollfilm Tenax with *f*:4.5 Dogmar lens, and the exposure at about 3 P.M. in February was 1/25 second at *f*:8 with 2X Goerz filter.

"Sailing," Fig. 28, was made in Gloucester harbor on a sunny afternoon, with the Plaubel Makina camera with a 10 cm Anticomar lens. The exposure was 1/100 second at *f*:11 with medium yellow filter. The enlargement is from a portion of the 2¼ by 3¼ negative, about 1 by 1½ inches. The Plenachrome rollfilm was developed in the Agfa No. 12 formula.

"Gas Tank," Fig. 29. The interest here was in the metallic sheen of the aluminum painted tank and the curved shadow of the steps, and so it was photographed as literally and as realistically as possible, taking full advantage of the ability of the process to reproduce textures and the subtle gradations. The sky tone was darkened by using a medium yellow filter. This is the type of subject that can be treated very successfully with the camera and though it is a far cry from the romantic landscape photographed with a soft-focus lens, it has great pictorial possibilities and can be just as interesting. One of the strongest attractions of pictorial photography is the tremendously varied subject material and methods of treatment that are so readily available. The exposure for this shot was 1/100 second at *f*: 11 with medium yellow filter on Panatomic rollfilm which was developed in the Agfa No. 12 formula.

"EMPTY BENCHES," Fig. 30, is an attempt to reproduce the rhythm of the curved lines all leading the eye to the top left hand corner of the picture. A little variety is introduced by the horizontal line of the aisle purposely placed rather near the top. This subject was welcomed also as an opportunity to try to show contrast but to retain at the same time the delicate texture of the marble benches in sunlight and some luminosity in the deep shadows. The exposure on Plenachrome rollfilm was 1/50 second at *f*: 11 on a sunny afternoon, with a light yellow filter and the film was developed — but not too far — in the Agfa No. 12 metol developer. The camera used was the Plaubel Makina with Anticomar *f*: 2.9 lens.

"POWER," Fig. 31, was photographed in the summer of 1932 and was first exhibited at the Boston Salon in the spring of 1933. This is apparently a very popular type of subject and the same title seems to be selected in many instances. There was one by Noel Griggs in the 1935 British Journal Almanac and another by Carlyle F. Trevelyan reproduced in the July 1939 issue of the Journal of the Photographic Society of America. There is a strong appeal in the contrast of man's handiwork with the grandeur of the sky.

There is subject interest and an opportunity to display the ability of the camera to portray the delicate gradations of the cloud formations. So, although this type of subject has been photographed many times, it will probably be photographed quite frequently as it offers so many interesting possibilities. This was made with the 3A Kodak on Agfa Plenachrome rollfilm with an exposure of 1/50 second at *f*: 8 with a Kodak color filter on the lens.

"RADIO CITY," Fig. 32, was seen from the Gardens of the Nations on the 17th story of the R. C. A. Building, on a Sunday morning about 11 o'clock. The convergence of the vertical lines is rather amusing and these vertical lines are nicely balanced by the rather strong line of the sidewalk in opposition to them. The taxicab and the manhole covers break up the rather flat tone of the roadway. This too is what might be described as a pattern picture and it also has a certain amount of human interest. It was made with the Plaubel Makina with the *f*: 2.9 lens stopped down to *f*: 8, the exposure was 1/50 second, with no filter, on Agfa Plenachrome film which was developed in Agfa No. 12.

"ALL WET," Fig. 34, is a "candid" shot that was made many years ago, long before the so-called "candid" cameras were so popular. It is included as an example of the lighting that is obtained in direct sunlight. The sunlight effect is evident because of the definite edge that is seen in the shadow portions, such as the shadow of the boy's ear, which has a sharply defined edge and does not blend into the surrounding tones. However, the shadows are luminous and full of color, which is far more agreeable and more truthful than if they were solid black. There is usually very little solid black in any natural objects that are illuminated by outdoor light, either direct sunlight or more diffused light, and it is often necessary to give sufficient exposure to avoid getting too much contrast in the negative in the case of exposures in full sunlight. This was made with a Graflex, with Cooke anastigmat lens, with an exposure of 1/25 second at *f*: 11 on a Kodak filmpack. It was made on the shore of Long Lake in Maine, at a boys' summer camp.

"GAY AND TESSA KINDERSLEY," by Dorothy Wilding, Fig. 35, is an unusual picture that has many delightful qualities. The spontaneity and naturalness of the pose and expressions are quite remarkable. Notice particularly the natural positions of both children's feet. The inclusion of the book shelf above the heads is a clever idea; it provides a frame for the figures and does away with the rather disturbing effect of the baseboard which would be a defect in composition if it were the only horizontal line in the picture. The values throughout the picture, as usual in Dorothy Wilding's portraits, are excellent, and the shadow on the pleasantly toned background adds considerable interest. This was made with a Kodak studio camera, equipped with a Dallmeyer Pentac lens. The exposure was 1/25 second with artificial light at *f*:4 on an Ilford Ortho Fast emulsion.

"EARLY SPRING," Fig. 36, is a subject that has very little intrinsic beauty or interest. Such roads through the woods may be found practically anywhere. It is an attempt to portray a mood of nature and to reproduce the silvery brightness of spring light on a rather hazy day with the sun breaking through a clouded sky. The negative was made on Agfa Plenachrome film used in a 6 by 6 Rolleiflex camera, with an exposure of 1/25 second at *f*:8 in hazy sunlight on a spring afternoon, with a light yellow filter on the lens. The film was developed in Agfa No. 12 and the print from which the reproduction was made is on Tuma-Gas, toned blue.

"EVENING SHADOWS," Fig. 37, is just another rendering of those wiggling mast reflections that are always so fascinating. It was made rather late in the afternoon, and the evening shadow effect was further increased by inking up the bromoil print a bit more heavily at the top. Though, as a general rule, a group of two — two people, two animals or two of anything — is apt to lead to a division of interest, in this case the two vertical reflections tend to increase the interest because of their similarity with slight differences. As a matter of fact, there are none of the so-called laws or rules of composition that cannot be disregarded if by doing so the picture can be improved or can be made more interesting. The placing of the horizon line close to the top of the picture space gives plenty of room to display the interesting wavy reflections to the best advantage. This was made with a Graflex camera, with 2B Tessar lens stopped down to *f*:8. The exposure was 1/25 second on a Standard Orthonon plate, with no filter.

"WARMTH OF THE WINTER SUN," by Frank R. Fraprie, Fig. 38, was made in Taormina in Sicily. The old lady who was sitting on a block of stone in the sunlight, was afraid of the camera and would not willingly pose for her picture, so the photographer had to stand behind a wall, set the camera, emerge suddenly and make a quick snap before he was observed. The conditions of brilliant sunlight and dense shadow offered some difficulty for a snapshot, but the final exposure shows full details in both shadow and sunlight and the print is an untrimmed enlargement of the whole negative without any dodging or handwork. The picture was made with a 3¼ by 4¼ Goerz Tenax rollfilm camera, equipped with a Goerz *f*:4.5 Dogmar lens and a 2× yellow filter. The exposure was 1/10 second at *f*:8 on an orthochromatic film.

" SUNRISE," Fig. 39, was made early in the morning in July on an island in Lake Winnepesaukee in New Hampshire. The sun's disk was just barely visible through light clouds and the receding planes of the distant hills were nicely differentiated. Another of the often quoted rules of composition is broken in this print by the almost central placing of the horizon line, but, after careful consideration of a print made from the entire negative area and trying different arrangements with a couple of L-shaped cards, this was the one that was finally found to be the most satisfactory.

In making the original negative a 5 by 7 view camera was used and the subject was arranged on the groundglass focusing screen with the horizon line carefully placed about one-third of the picture space from the top, in accordance with the canons of academic composition, but the placing shown here is the one that was finally adopted after making a print. The exposure on a Cramer Crown plate was 1/25 second at *f*: 11.

"SYMBOLS OF AUTUMN," by W. Dovel Le Sage, Fig. 40, is a typical Le Sage still life, characterized by faultless technique and a beautiful rendering of textures and values. Some of the delicate gradations in the chrysanthemums and on the grapes are lost in the reproduction. A detailed account of how this picture was made will be found in Mr. Le Sage's comments on page 104, so there is no need to repeat the details here.

"WANDERBIRD," Fig. 41. Here again we see the high horizon and wide foreground filled with "water marks" which are always so interesting. This ship from San Francisco was tied up in Gloucester Harbor in the summer of 1935 and was photographed quite extensively from all angles. The pattern of lines and shapes is rather "busy," but seems to fill the picture space satisfactorily. The exposure was made with a Rolleiflex, 6 by 6, with *f*: 3.5 Tessar lens used at *f*: 11, 1/25 second with light yellow filter on Agfa Plenachrome rollfilm which was developed in Agfa No. 12.

"CAPE ELIZABETH," Fig. 42, is the well-known beacon at Portland Head in Maine, photographed at one of the Portland Camera Club outings in the early spring. The use of a panchromatic film with a light yellow filter has given approximately correct tonal values in the clouded sky so that the white beacon stands out with sufficient emphasis. The tiny lighthouse in the distance, at the extreme right of the picture, helps to balance the mass on the left. All that was necessary in printing this was to darken the rocks in the foreground a little. This, too, was made with the Rolleiflex 6 by 6 camera with the *f*: 3.5 lens stopped down to *f*: 11.

The exposure on Agfa Finopan film was 1/50 second with light yellow filter. The film was developed in Agfa No. 12.

"Thunder Over Amalfi," by Frank R. Fraprie, Fig. 43. The photographing of this subject was suggested by the strong contrasts between the cloud shadow in the foreground and the brilliant light on the water in the distance beyond the thunder cloud. The composition is principally a figure seven produced by the silhouette of the cliff in the foreground carrying the eye up to the successive headlands in the distance, each lighter in tone than the last, and through the bottom of the rain cloud. With only these two lines the motive would hardly have sufficient interest, but the delicate tracery of the contorted tree fills up the empty space with a pleasing Japanesque pattern. The great mass of black foreground is not entirely empty, there being a suggestion of detail throughout, but the brilliancy of the light in the distance is sufficient to carry the weight of even this great mass of darkness. In making this picture a 3¼ by 4¼ Goerz rollfilm Tenax camera was used, fitted with *f*:4.5 Dogmar lens. The exposure was 1/10 second at *f*:8, with a Goerz No. 2 yellow filter, on a February afternoon at 4 P.M. on Agfa Isochrom film which was developed in M-Q.

"The One That Got Away," Fig. 44, was made in a boys' camp on Lake Winnepesaukee, and the fish really did get away. It was a lucky snap made at just the exact instant when the fish was being pulled out of the water. In this picture again we find a rule of composition disregarded, for the boy is placed almost exactly in the center of the picture space from side to side, however, all the different objects, the diving board he is standing on, the dock and its roof, fill the space on the right while the left side of the picture is comparatively empty and this keeps the centrally placed figure from appearing to be out of balance. This was made with a Graflex camera, on Kodak Verichrome filmpack, with an exposure of 1/50 second at *f*:11.

"APPLE VALLEY," Fig. 45, was made in the Berkshire Hills in Massachusetts on an ideal spring day. By getting a little extra contrast in the bromoil print, the tree trunks and branches were brought out strongly against the white blossoms. The little house half hidden among the trees provides a suggestion of a human habitation. A group of children playing on the grass would have added to the interest, but none were available. By using a Defender Highly Green Sensitive cut film, the values in the greens are nicely rendered with an exposure of 1/25 second at *f*: 11. This picture was made with the 3¼ by 4¼ Auto Graflex used on a tripod and the image was focused on the focusing panel.

"SUNSET AT STONY BEACH," by Frank R. Fraprie, Fig. 46, shows a wooded point on the Massachusetts coast, whose trees and outlines had a fascination for the maker for many years. The buildings and their accessories, however, were not sufficiently dignified to produce a picture until one afternoon, when a storm was breaking up, the moment came when the prosaic landscape became sufficiently romantic. The horizontal lines of the beach, the water, the horizon and the clouds needed a strong vertical opposition and this is produced partly by the line of light on the beach carrying one's eye through the trees and the light spot up toward the top of the picture, a merely suggested but very strong line, and partly by the boat indistinctly seen in the lower left hand corner. A study of this picture will show that it has several other suggested lines, such as the one from the corner of the boat and through the clouds to the other edge. This picture also was made with the 3¼ by 4¼ Goerz rollfilm Tenax with an exposure of 1/10 second at *f*:4.5 at 6 P.M. in August on Kodak Standard rollfilm.

"SHELL BEACH," Fig. 47. Here again is a fortunate combination of pictorial elements. The "cosmos" was perfectly satisfactory — the sky, earth and water were all in pleasing relation — and it needed only the introduction of the tiny figures to suggest scale and add the impressiveness of great open spaces. This was made on Sanibel Island off the west coast of Florida where there are beaches that are said to be the finest shell beaches in the world. Here again we have a refutation of Whistler's rather ill-considered remark that nature is very seldom right. This was enlarged from a portion of a 2¼ by 3¼ negative made with a Voigtländer Rangefinder Bessa fitted with a Helomar lens which was used at *f*: 11 on an afternoon in July in bright sunlight. A medium yellow filter was used with Panatomic-X film and the exposure was 1/100 second. The film was developed in the Windisch metol-sulphite developer. In making the enlargement the lower left hand corner was darkened a bit because this beach, being composed almost entirely of crushed shell — not sand — is very white.

"SEA OATS," Fig. 48. This shot was made on St. Augustine Beach in Florida in July 1938. The reeds are quite tall, but their height was emphasized by adopting a very low viewpoint close to the ground. These Florida skies are very pictorial and the opening in the reeds with a path going off into the distance adds to the pictorial interest. This was made with the Makina, 2¼ by 3¼, with *f*: 2.9 10 cm lens stopped down to *f*: 11 and the exposure on Agfa Plenachrome film was 1/50 second with medium yellow filter. The film was developed in Ansco No. 12.

INDEX

Accent, 39
All Wet, 88, 147
American Boy, An, 38, 140
American scenes, 16
Anderson, Paul Lewis, 7
Apple Valley, 40, 152
Atget, Eugen, 16

Balance, 32
Breadth, 36
Bromoil, 26, 117
Budding Contenders, 42, 139

Candid Photography, 45
Cape Elizabeth, 51, 85, 150
Case for exhibition prints, 130
Cockers, 84, 143
Color, additive and subtractive, 57
  complementary, 58
  facts about, 57
  lack of, a source of disappointment, 13
  -sensitivity of films, 52
Composition, appropriate action following a careful analysis of impressions, 12
  constructive, 17
  exercise of the power of selection, 11
  matter of instinct, 15
  mechanics of suggestion, 8, 10
  selective, 17
  very largely common sense, 13
Connecticut Hillside, A, 50, 140
Control, personal, 46
Curve, S-shaped, 30
  Z-shaped, 31

Da Vinci, Leonardo, 19, 61
Detail, suppression of, 35
Developers, negative, 106
Distortion of lines and values, 81
Dow, Arthur, 34
Downes, W. H., 100
Duto attachment, 37

Early Spring, 62, 148
Emphasis, 85
Empty Benches, 74, 75, 90, 146
English Lane, An, 12, 85, 134
Enlarging, bromide, 111
Evening Shadows, 86, 148
Explorers, The, 39, 40, 42, 43, 140
Exposure, 71

Fassbender, Adolf, 43, 48
Figures in Landscape, 40
Filters, factors, 66
  use of, 64
Fine grain, 67
Finishing the print, 125
Florida Beach, 12, 42, 75, 82, 85, 134
Fraprie, Frank R., 50
Frozen Stream, The, 50, 145

Gas Tank, 74, 75, 90, 145
Gay and Tessa Kindersley, 148
General considerations, 1
Genre, 42
Gloucester Fishermen, 75, 137
Guilio, Cesare, 94

Hanson, Raymond, 50
Ház, Nicholas, 43

"Is It Nothing to You?" 33, 50, 137

Jordan, Franklin I., 50, 84
Judith, 135

Keighley, Alex., 48

Landscape work, 91
Lenses, long and short focus, 77
  soft-focus, 36
  Thambar, 37
Lightkeeper's House, The, 51, 82, 135
Lines, 27
  curved, 30
  Hogarth's, of Beauty, 30
  unseen, 31
  variety of, 28
Lythgoe, Herman, 50

Massing, 24
Michelangelo, 19
Misonne, Leonard, 6, 8, 10, 48
  "Soft-Sharp" screen, 36
Modernism, 17
Modernistic trend in portraiture, 89
Monet, 10
Mood of a landscape, 12
Moonlight, 101

News Building, 86, 141
Night photography, 102
Notan, 34

One That Got Away, The, 42, 151
Opening distance, illusion of, 92
Orthochromatic emulsions, 55

Panchromatic film, 56
Pattern, 90
Perspective, aerial, 60
  linear, 77
Poore, Henry R., 32
Portraiture, 87
Power, 90, 146
Purist, 52, 112
Photography, the outstanding quality of, 48

Radio City, 81, 90, 147
Relief, illusion of, 92
Restraint, 84
Rey, Guido, 43
Running In to See Mr. Lincoln, 13, 40, 82, 132, 135

Sailing, 40, 86, 145
Salons, sending prints to, 129
Sea Oats, 153
"See pictorially," learning to, 5
Scout, The, 135
Self-expression, 85
Semi-Lunar, 7, 136
Shell Beach, 40, 152
Simplicity, 82
Slade, George F., 50
Spacing, 22
Spectrum, photographic, 54
  wave lengths of, 53
Sprezzochuro, 18
Staten Island Ferry, 38, 62, 138
Steelyard, 32
Stevens, Major, 63
Stieglitz, 20
Still-life, 102
"Strong" positions in a picture, method of finding, 39
Study in Nudes, A, 142
Subject matter, choice of, 84
Subject, suitability of, 14
Suggestion, 95
Sumac Lane, 39, 62, 141
Summer, 62, 63, 144
Sun on the Roof, 95, 141
Sunlight in outdoor portraits, 88
Sunrise, 102, 149
Sunrise and sunset pictures, 102
Sunset at Stony Beach, 152
Surf at Bass Rocks, 38, 86, 138
Symbols of Autumn, 103, 150

Technique of pictorial photography, 106
  rather complicated, 3
Thorek, Max, 9, 48
Thunder Over Amalfi, 62, 86, 151
Tilney, F. C., 25
Tone values, 27
Tones, 71
Toning, 113
  Blue, 116
  Hypo-alum, 115
Triangle, 29
Trimming, 127

Values, landscape, 50
Vogel, Prof. H. W., 54

Wanderbird, 86, 150
Ward, H. Snowden, 11, 19
Warmth of the Winter Sun, 42, 149
Wet Water, 86, 137
Whitehead, John M., 9, 48
White Swan, 40, 86, 132, 139
Wilding, Dorothy, 9
Winter Eve, 141
Winter Night, 139

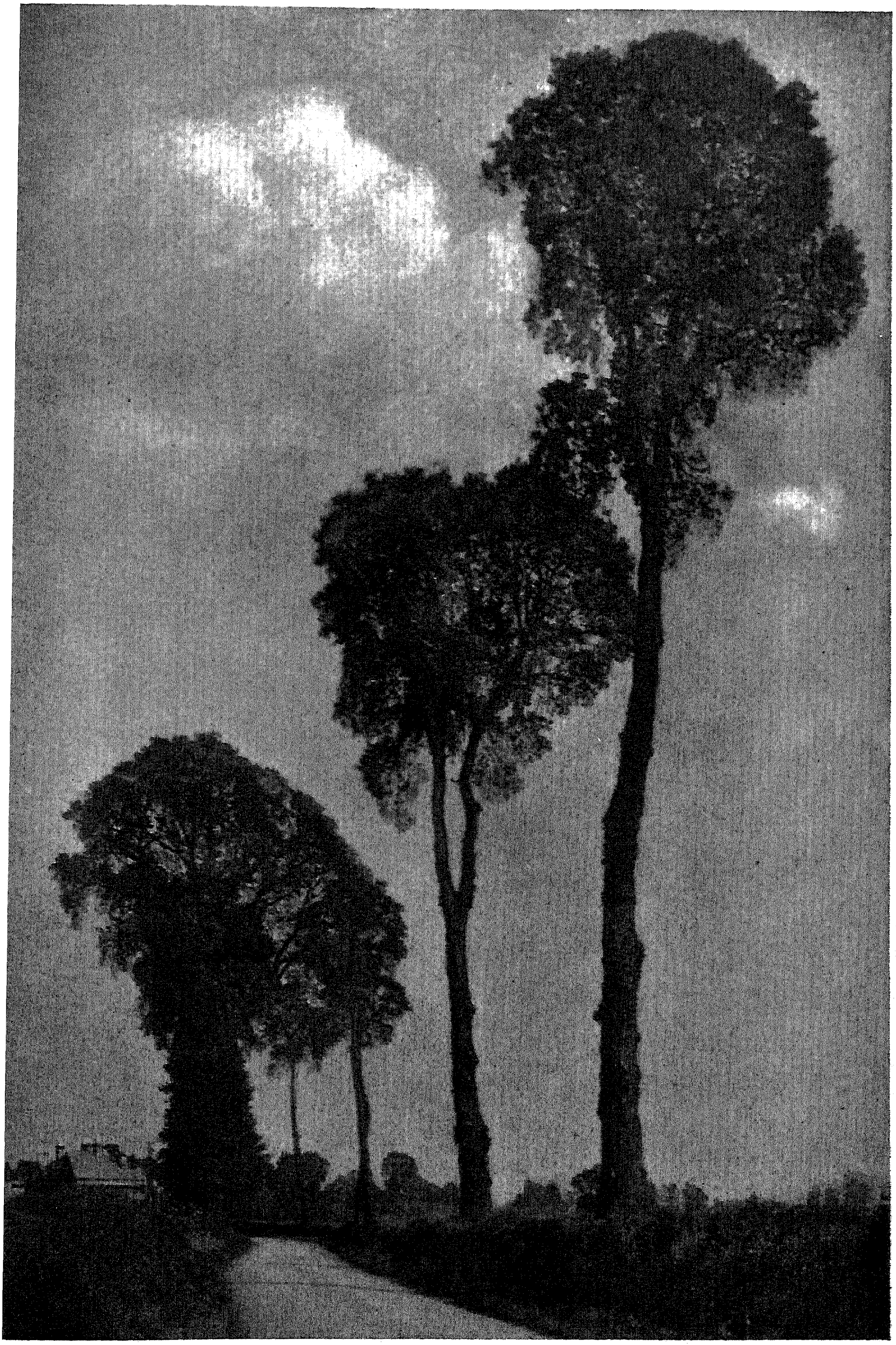


Fig. 1. AN ENGLISH LANE ARTHUR HAMMOND

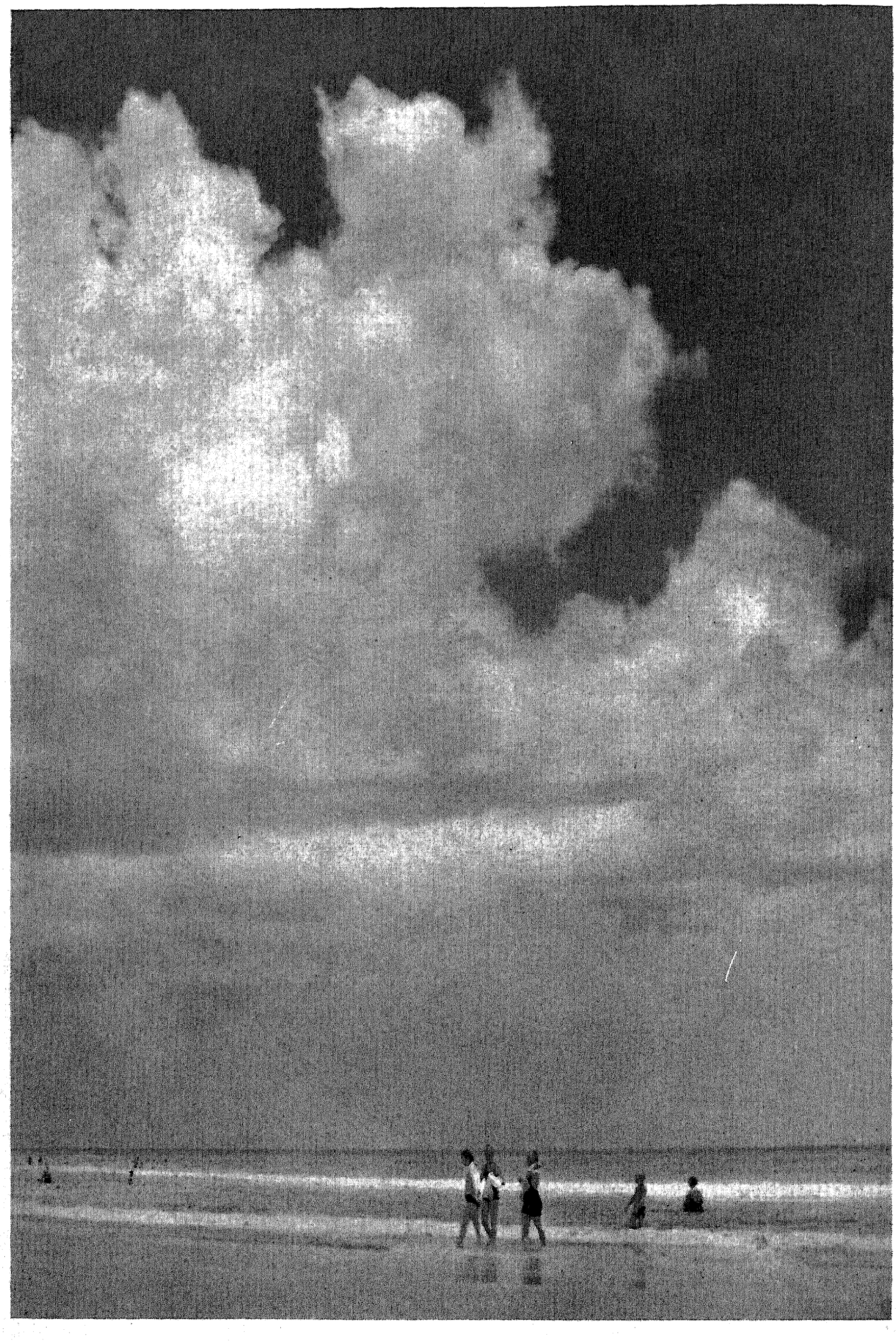


FIG. 2. FLORIDA BEACH ARTHUR HAMMOND

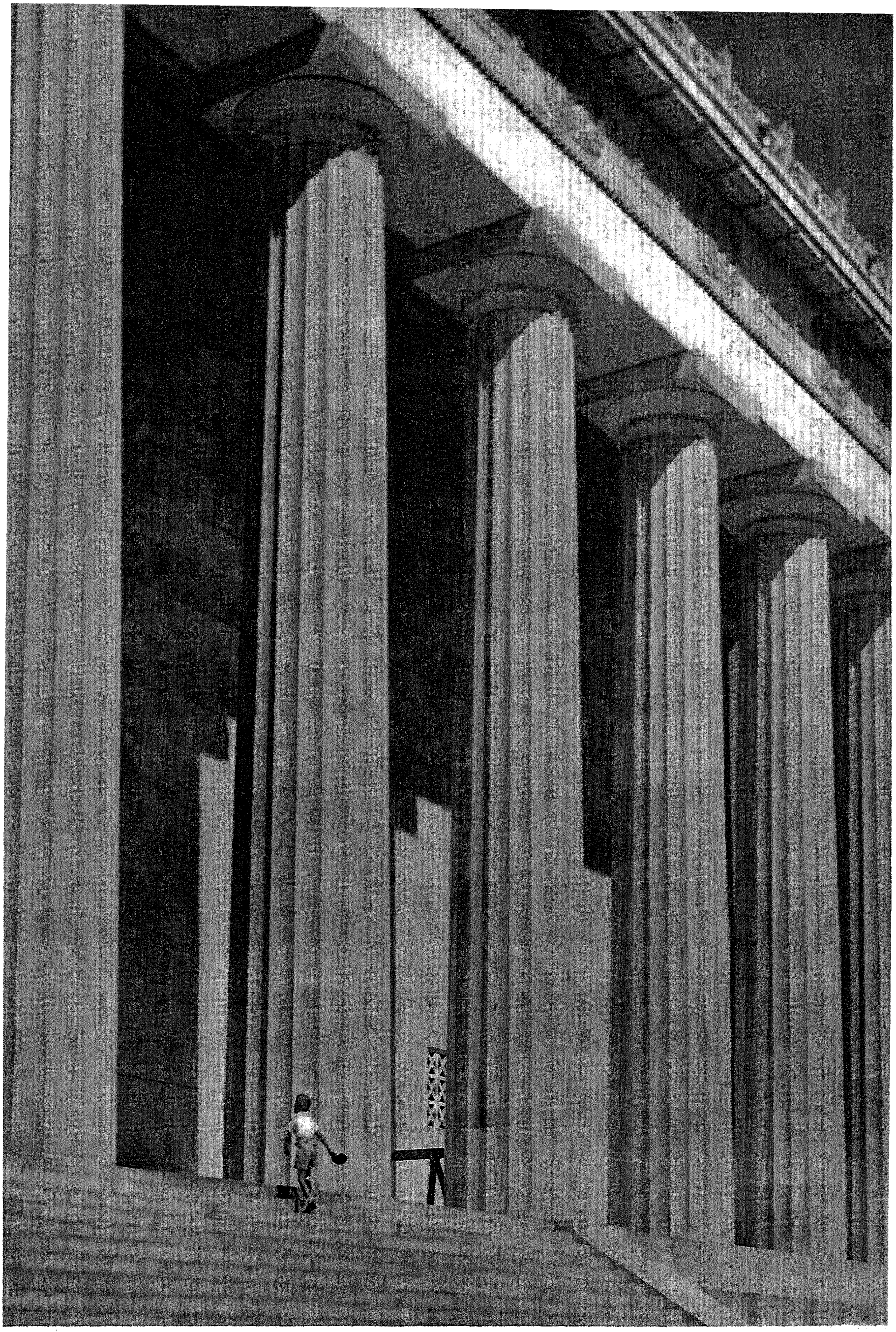


FIG. 3. RUNNING IN TO SEE MR. LINCOLN

ARTHUR HAMMOND

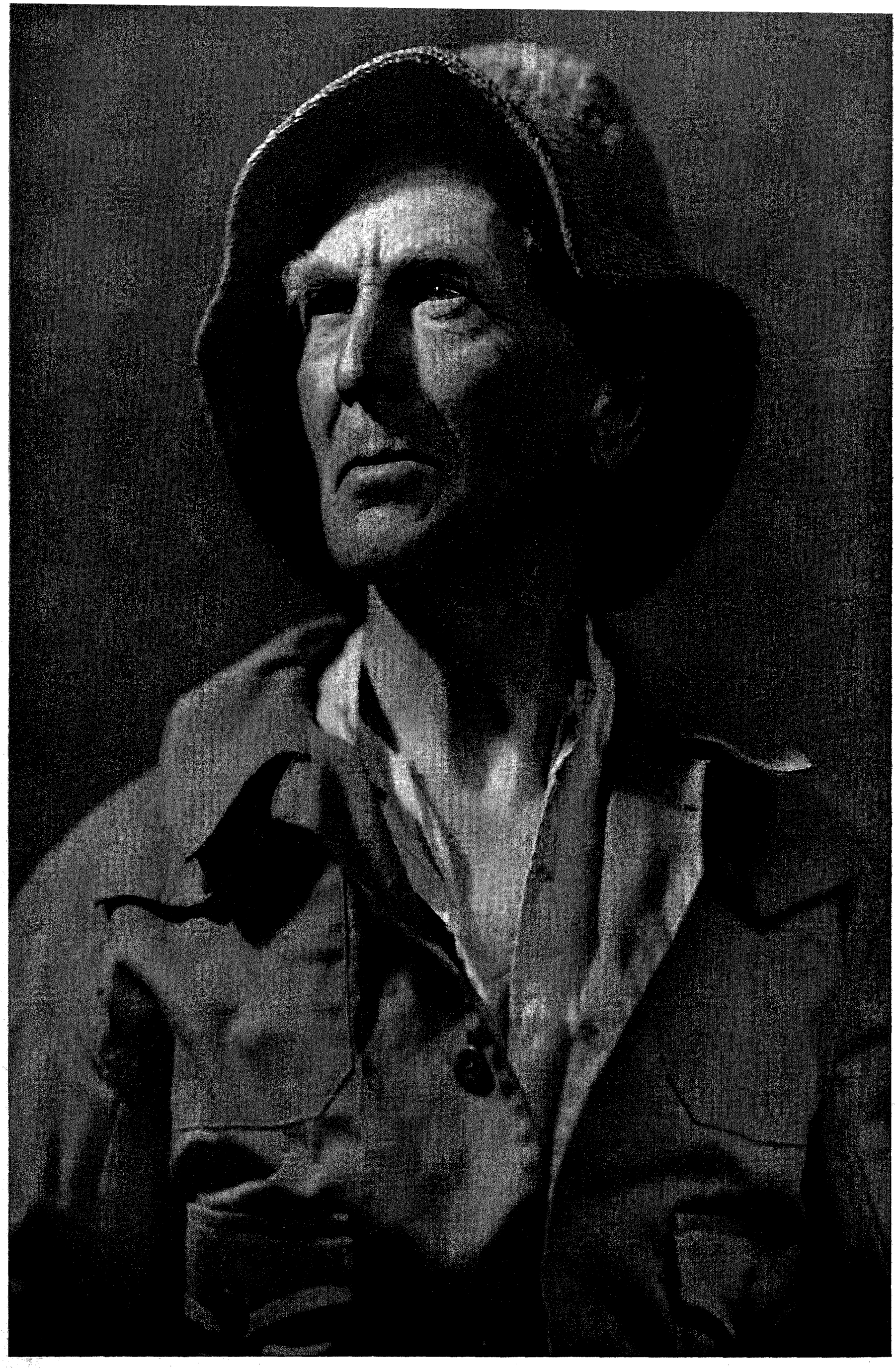


FIG. 4. THE SCOUT JULIAN SMITH

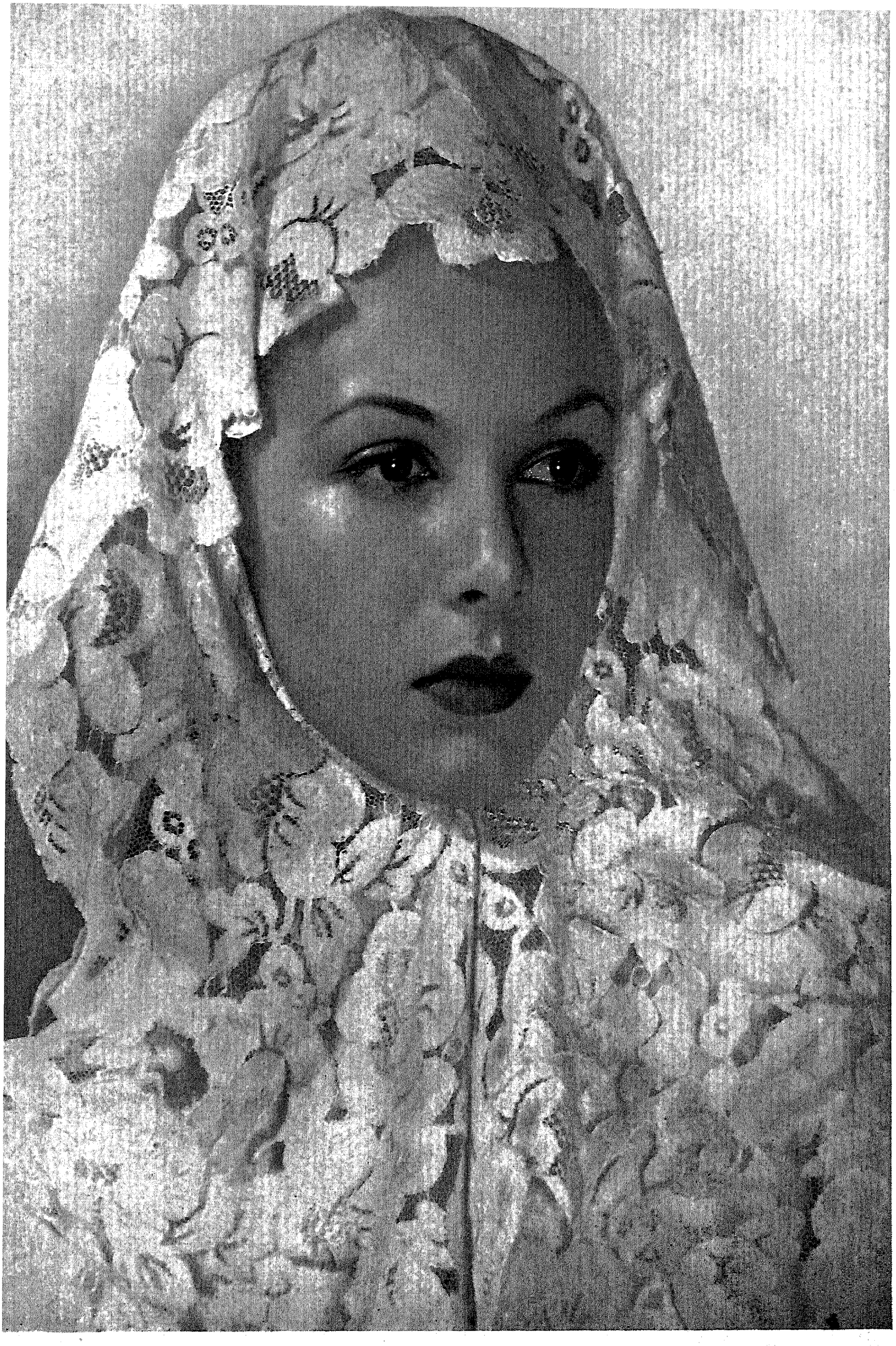


FIG. 5. JUDITH JOHN HUTCHINS

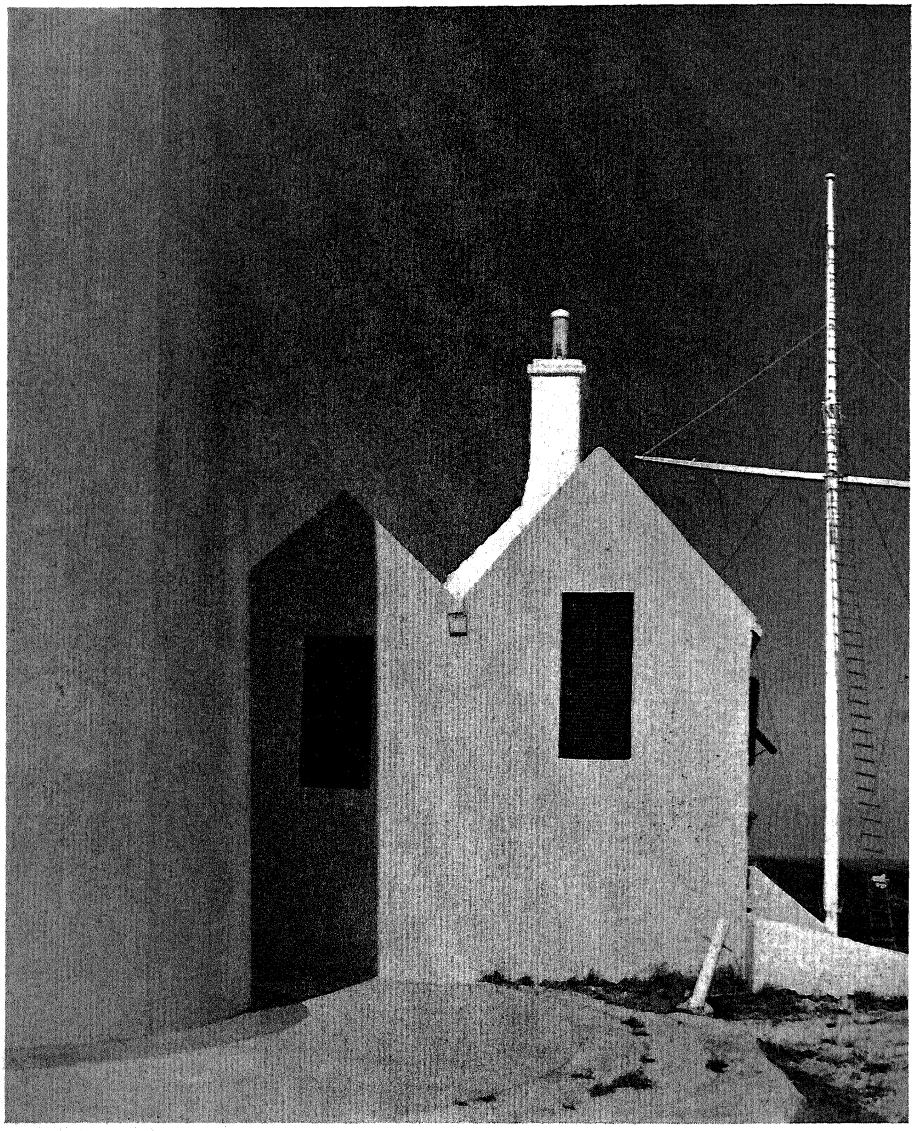


Fig. 6. THE LIGHTKEEPER'S HOUSE

Frank R. Fraprie

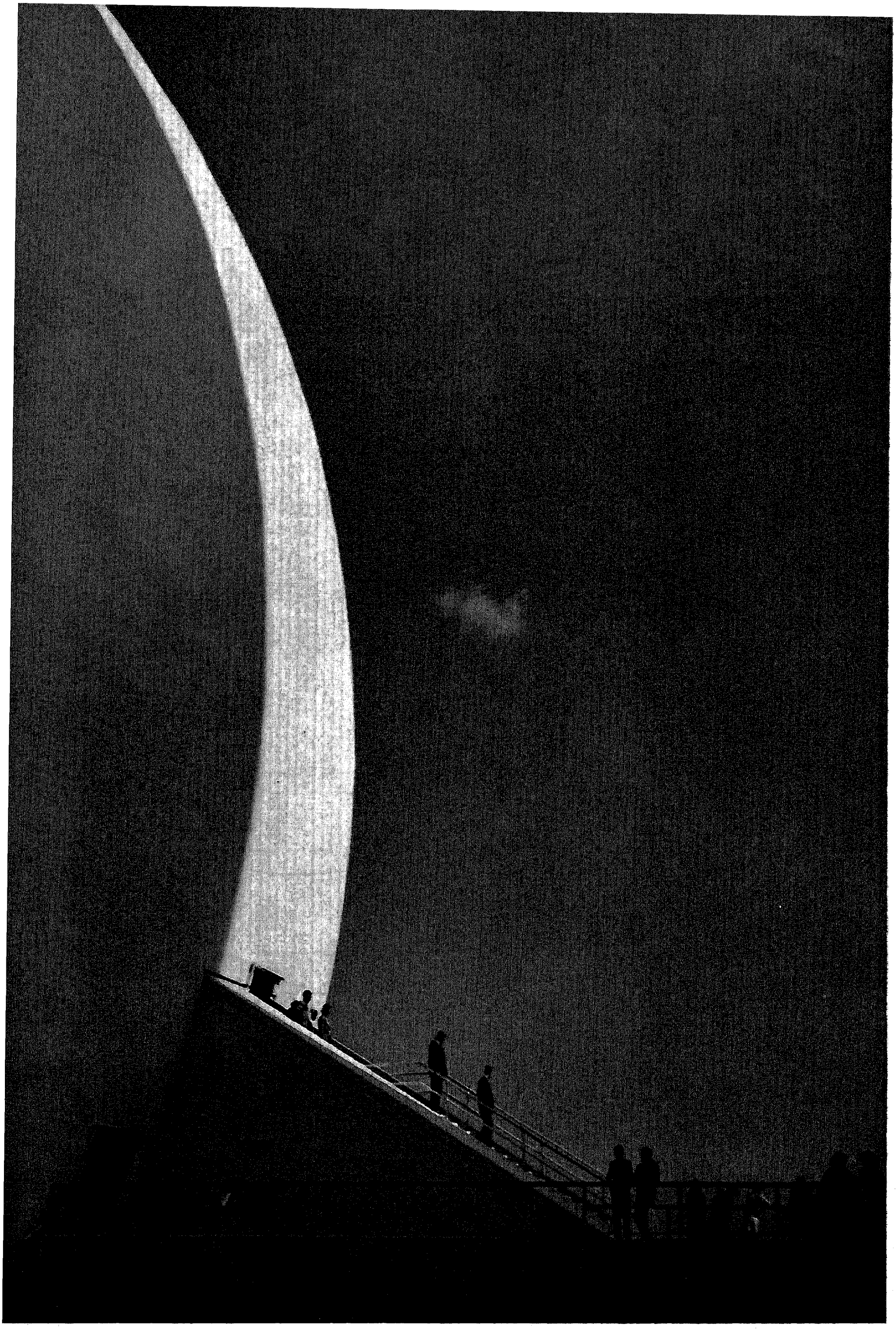


Fig. 7. SEMI-LUNAR ARTHUR HAMMOND

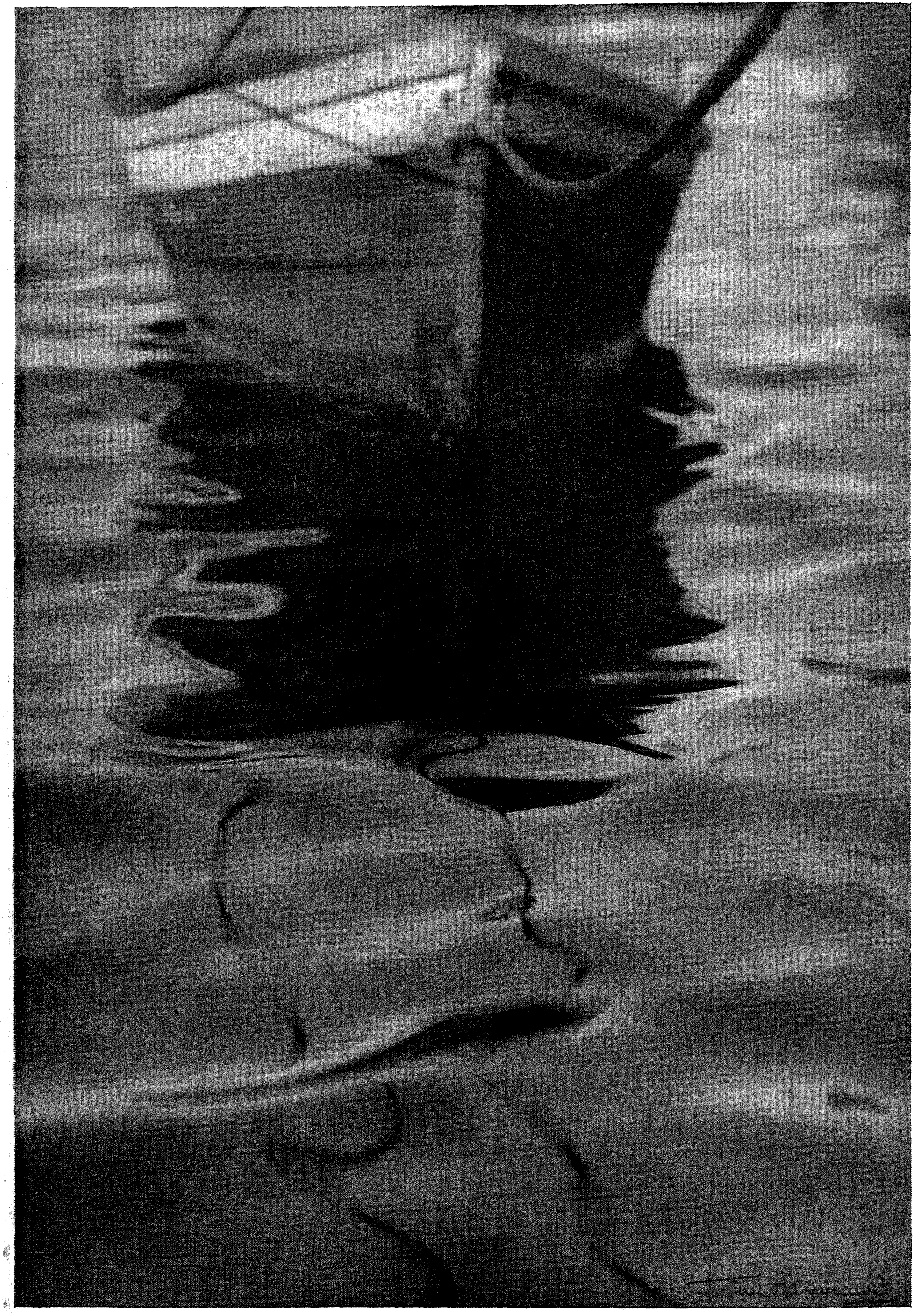


Fig. 8. WET WATER

Arthur Hammond

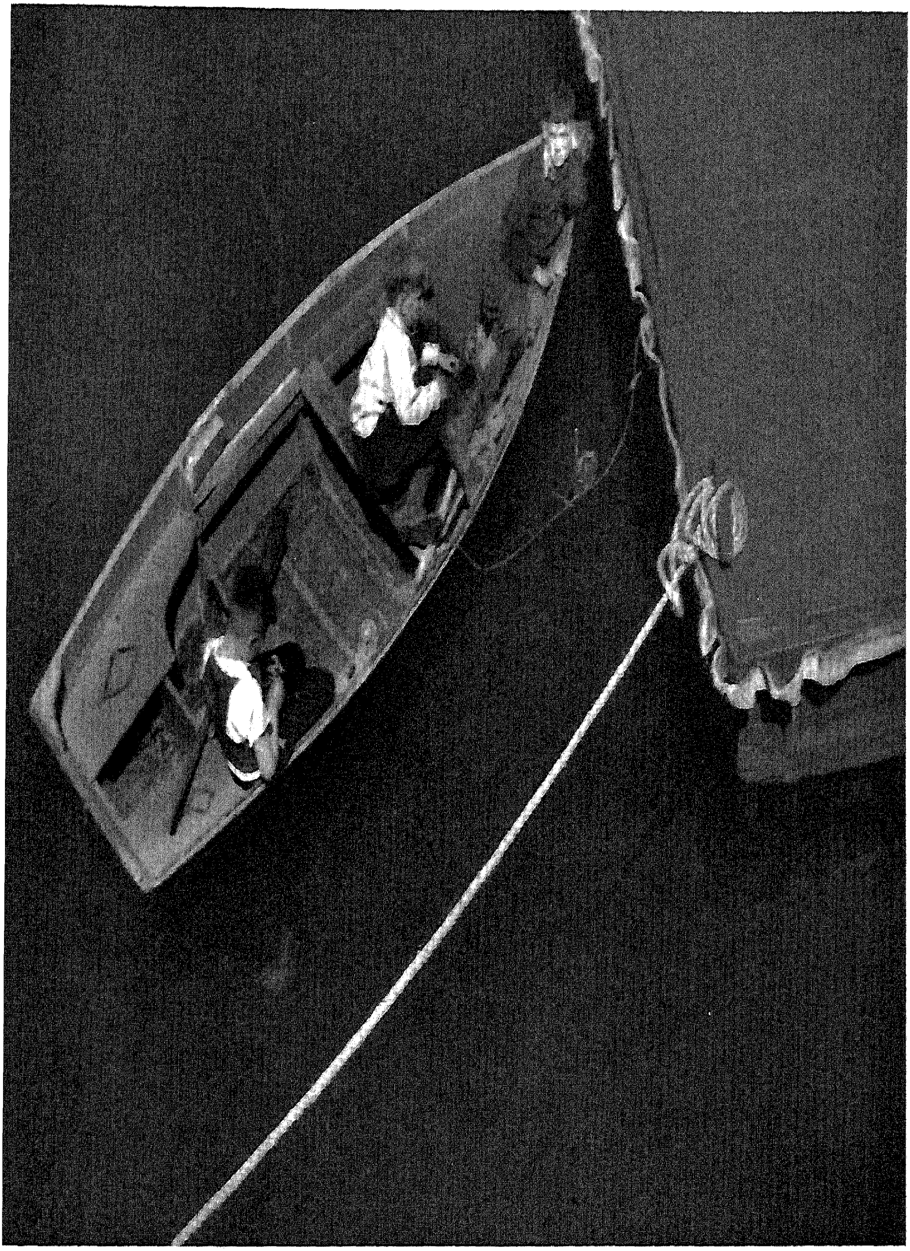


FIG. 9. GLOUCESTER FISHERMEN

ARTHUR HAMMOND

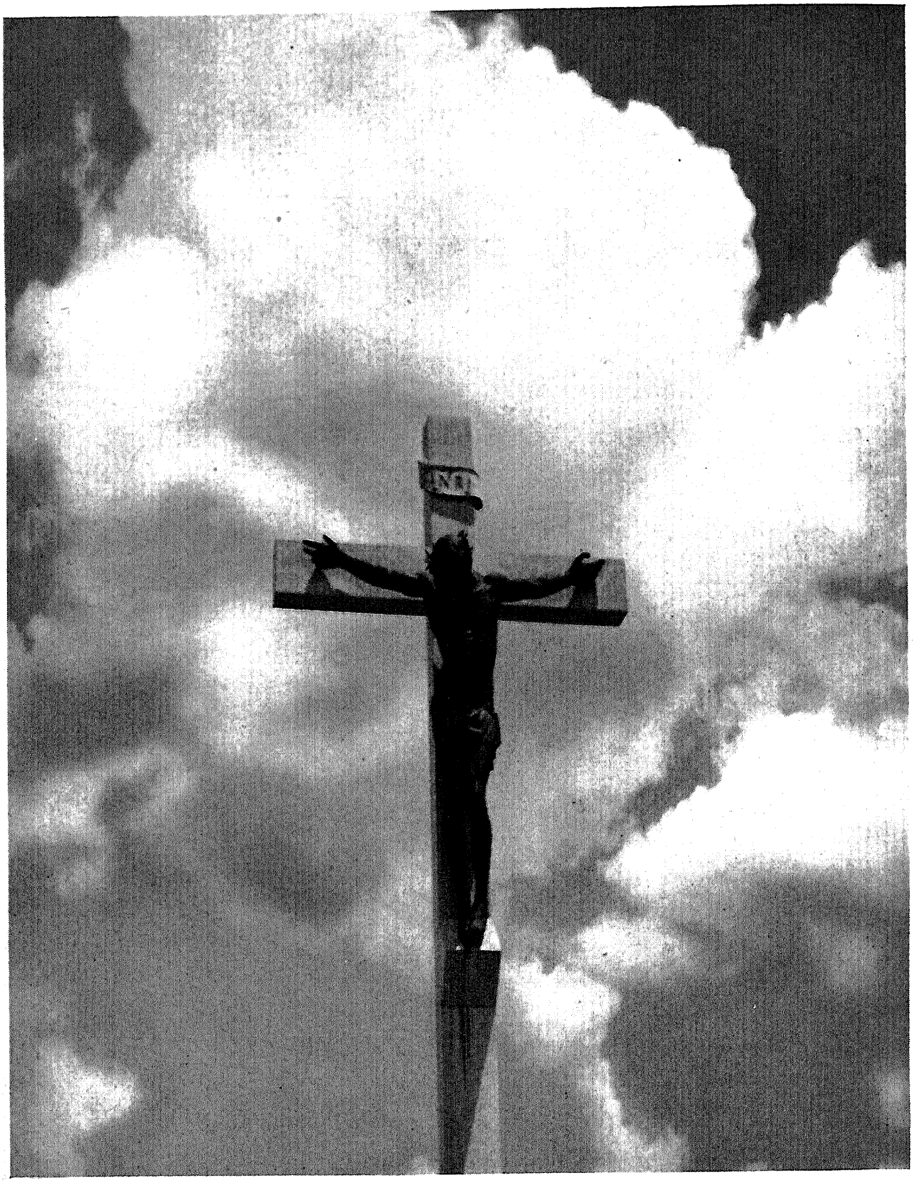
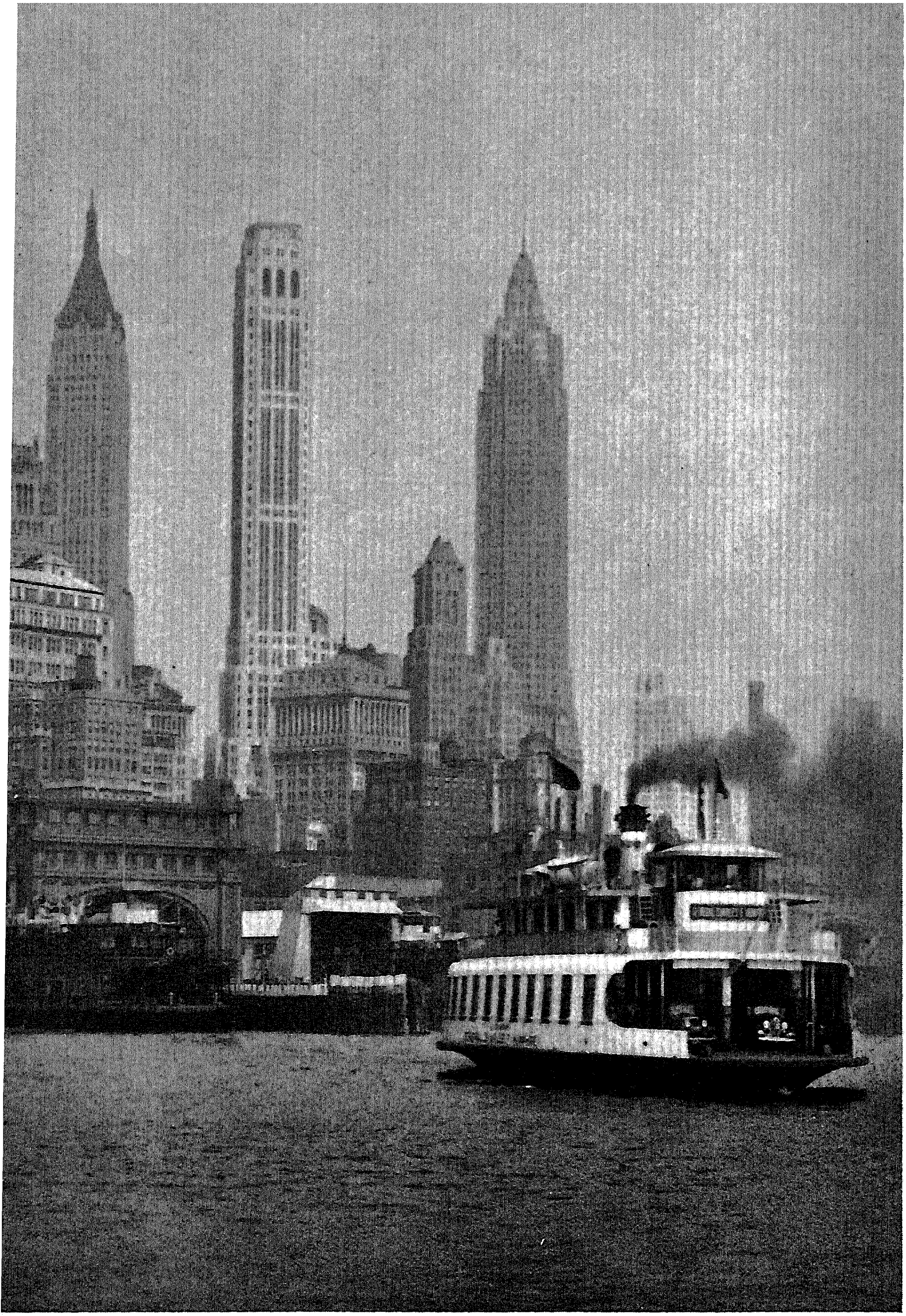


FIG. 10. "IS IT NOTHING TO YOU?" ARTHUR HAMMOND



IG. 11. STATEN ISLAND FERRY ARTHUR HAMMOND

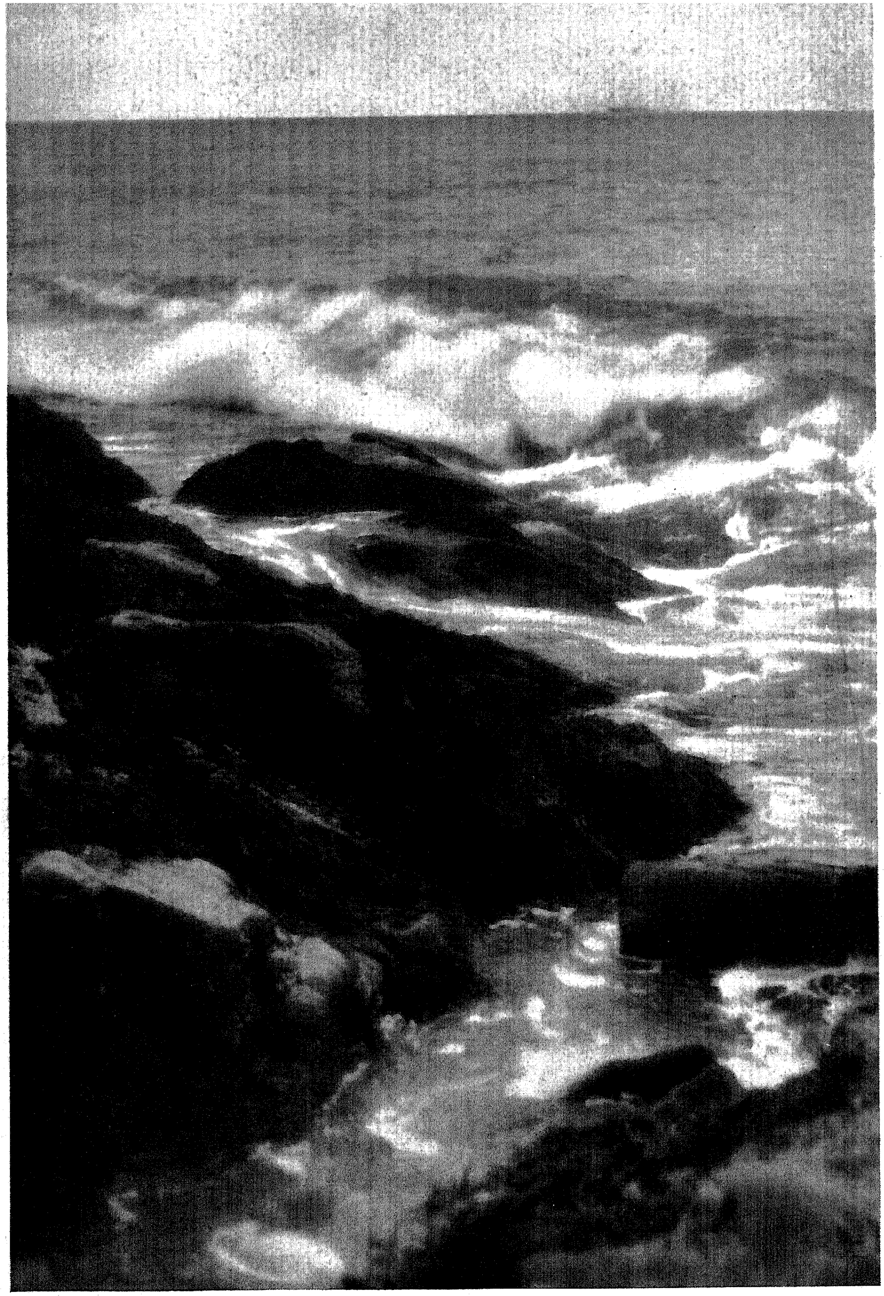
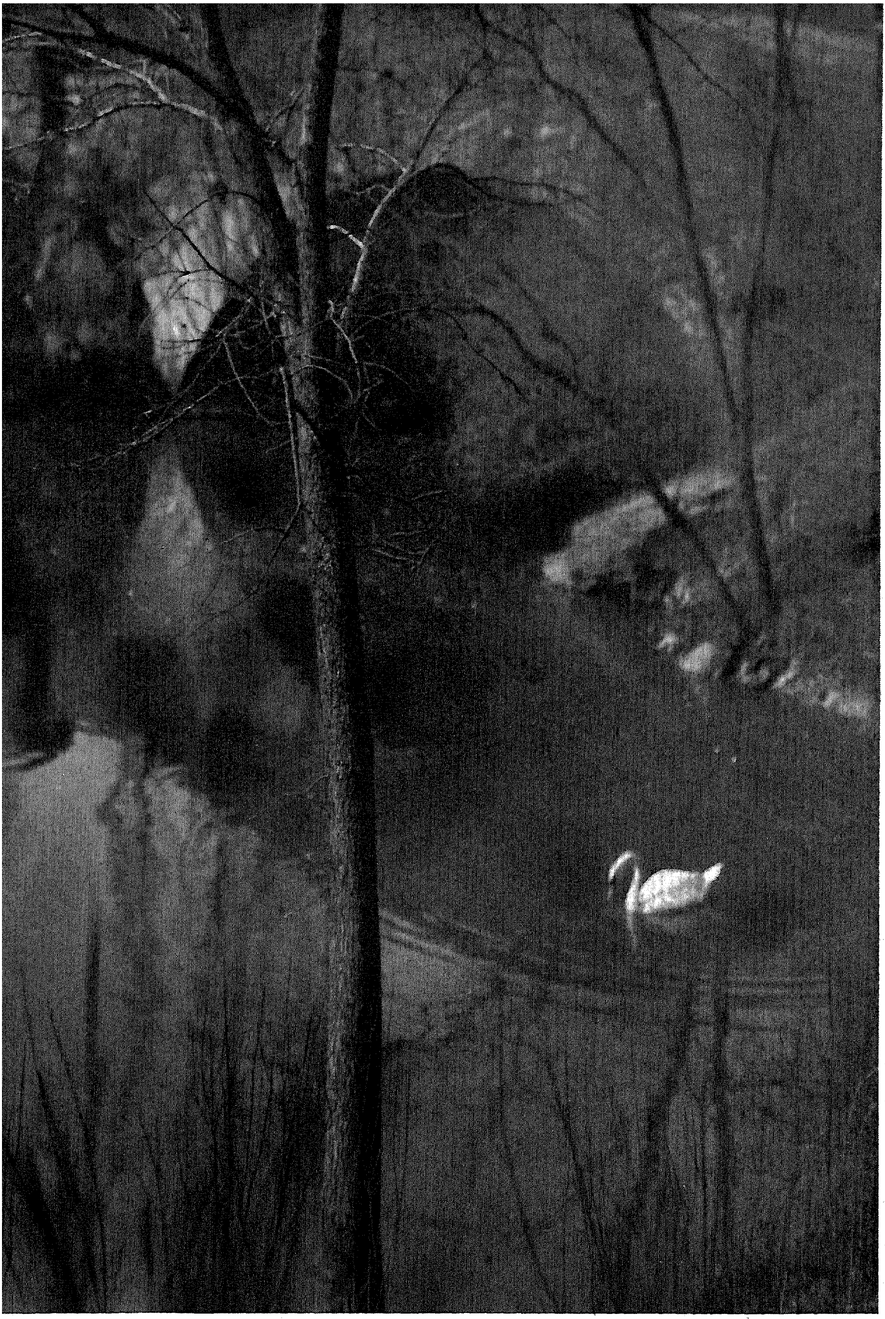


FIG. 12. SURF AT BASS ROCKS

ARTHUR HAMMOND



13. WHITE SWAN Arthur Hammond

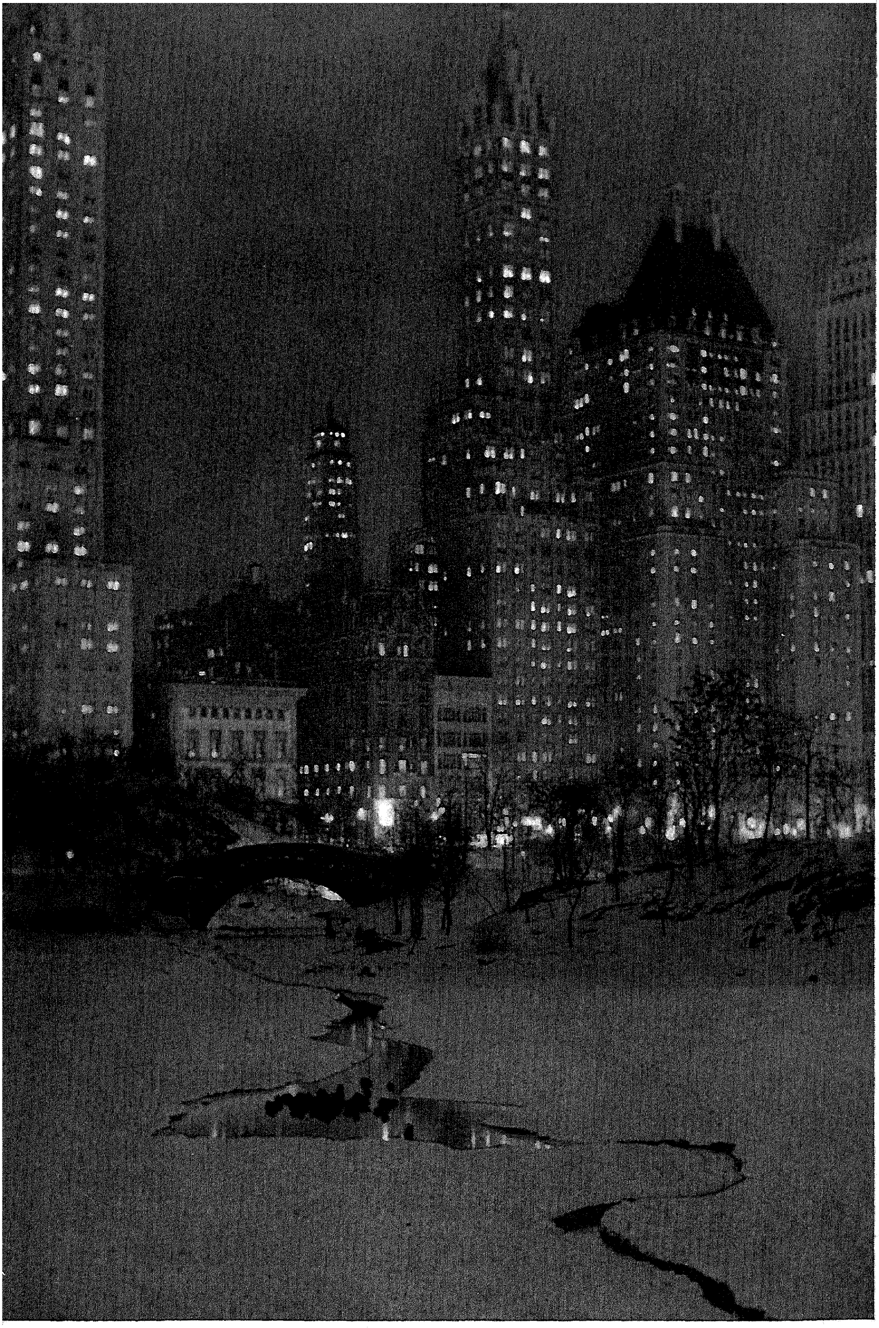
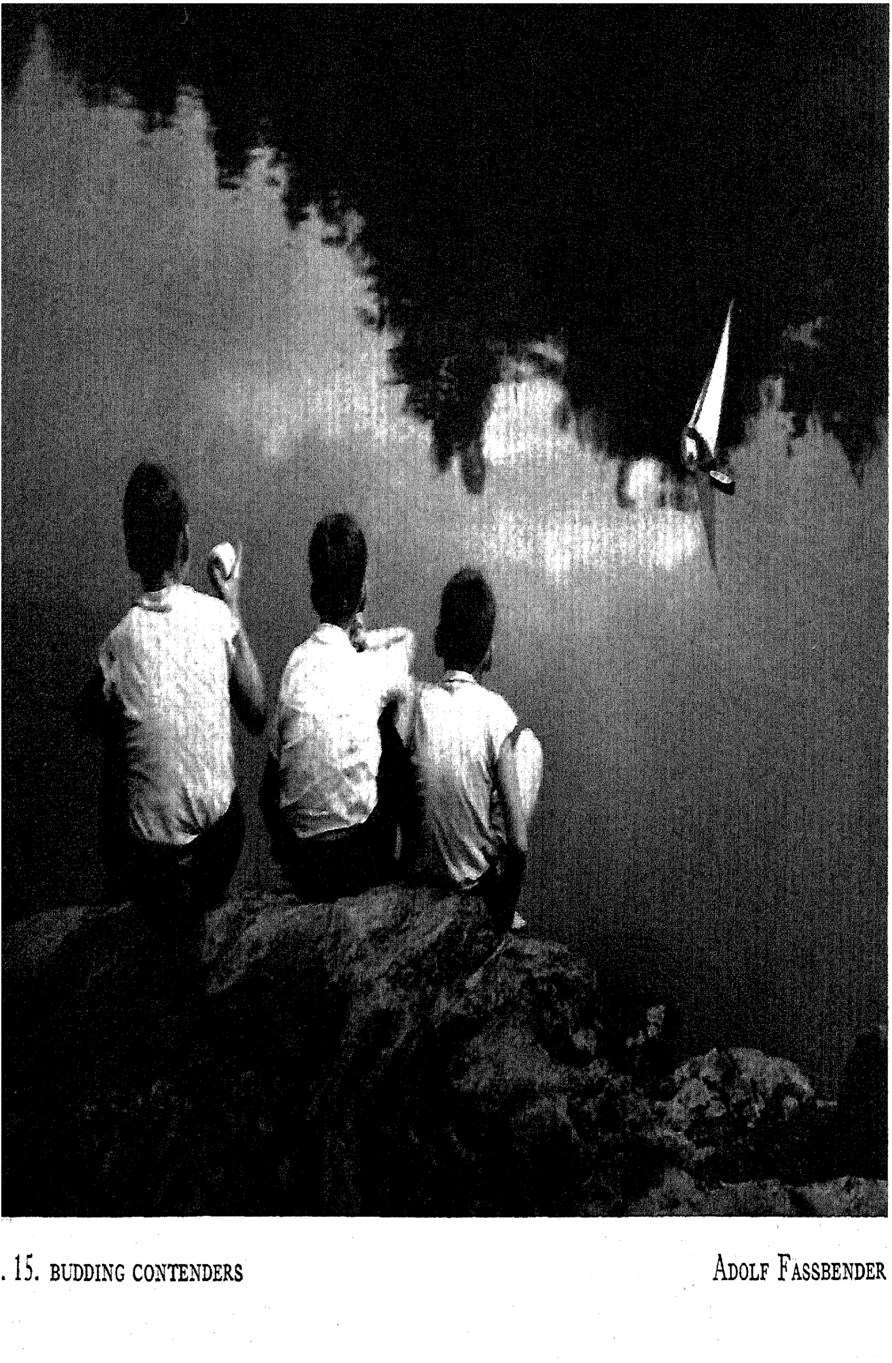


Fig. 14. WINTER NIGHT

Edward Alenius



IG. 15. BUDDING CONTENDERS

ADOLF FASSBENDER

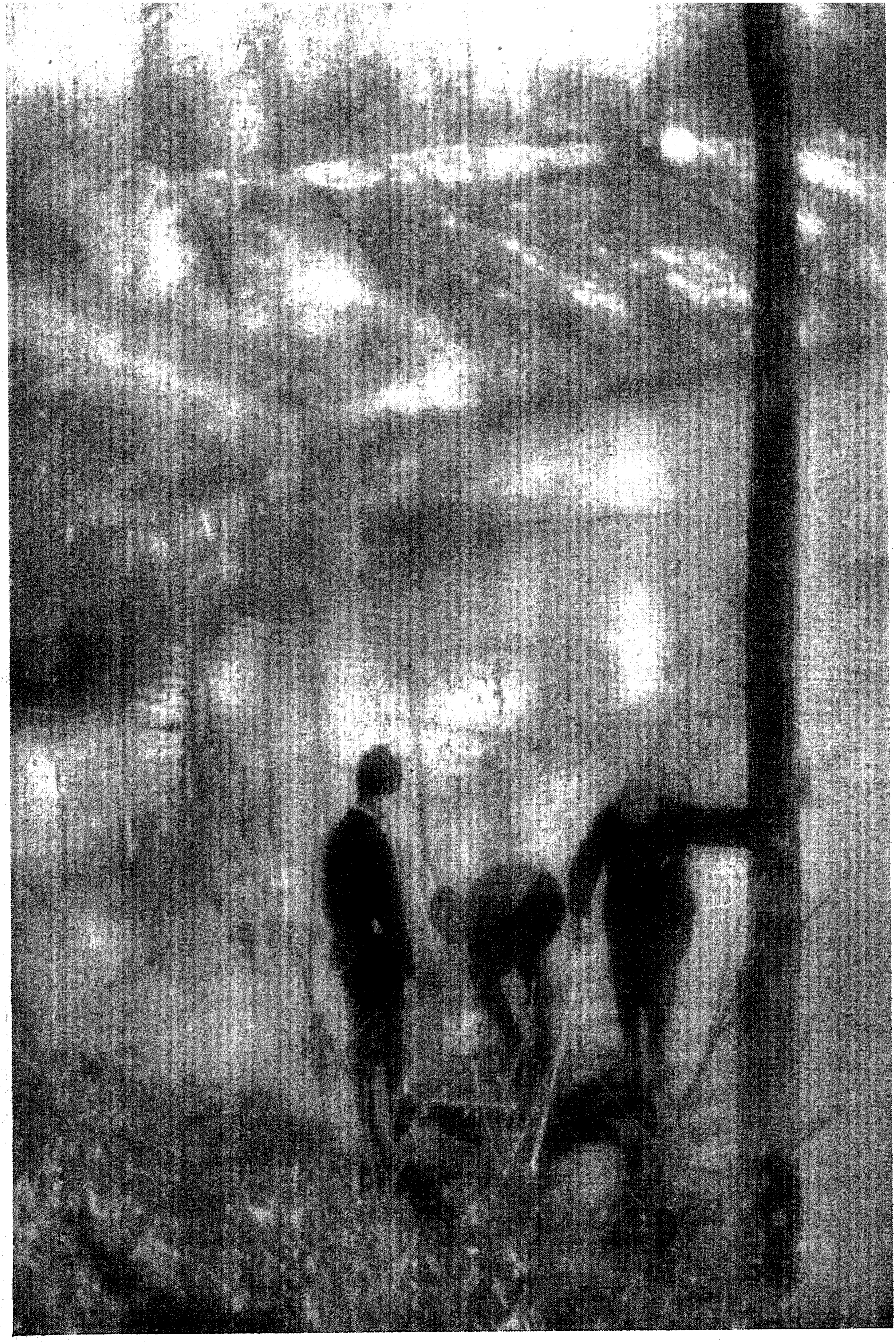


Fig. 16. THE EXPLORERS ARTHUR HAMMOND

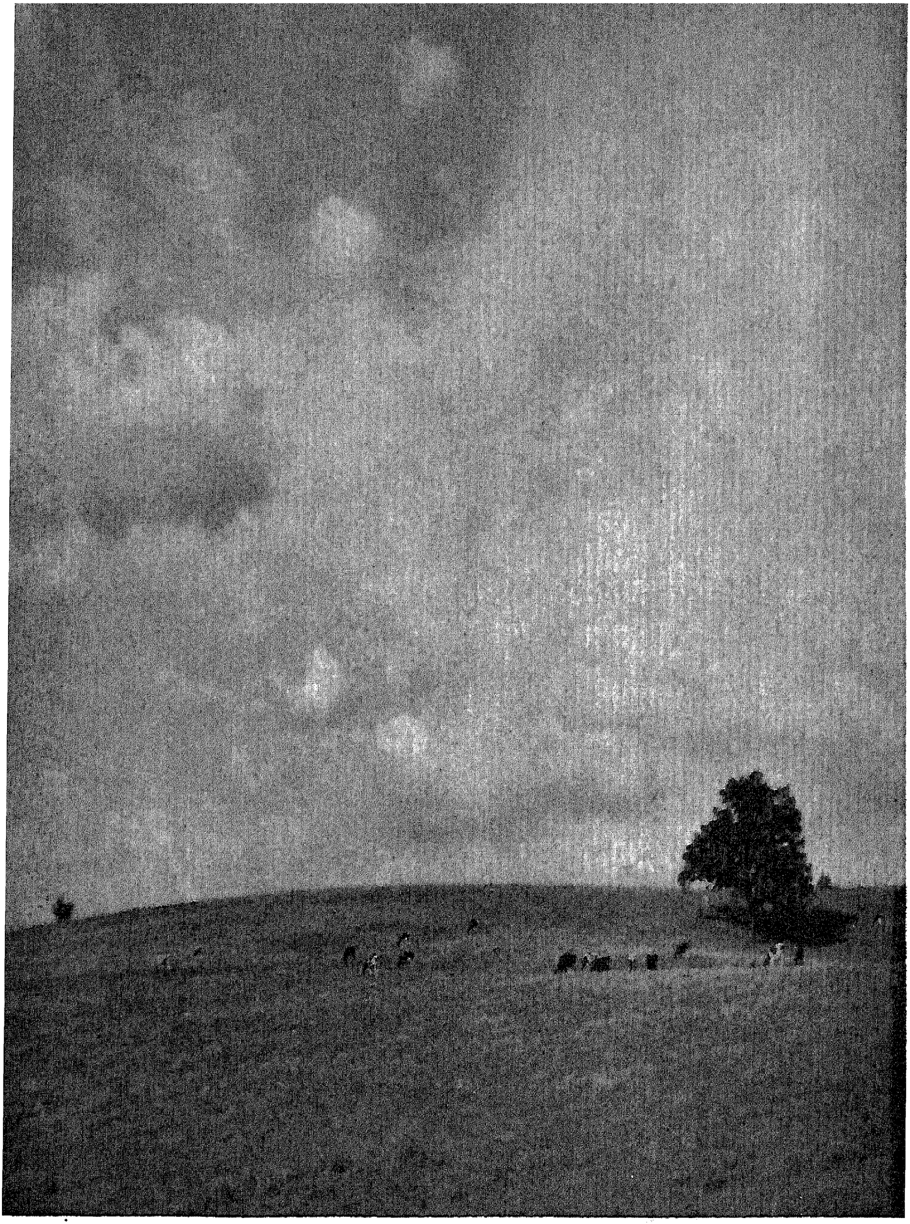


FIG. 17. A CONNECTICUT HILLSIDE ARTHUR HAMMOND

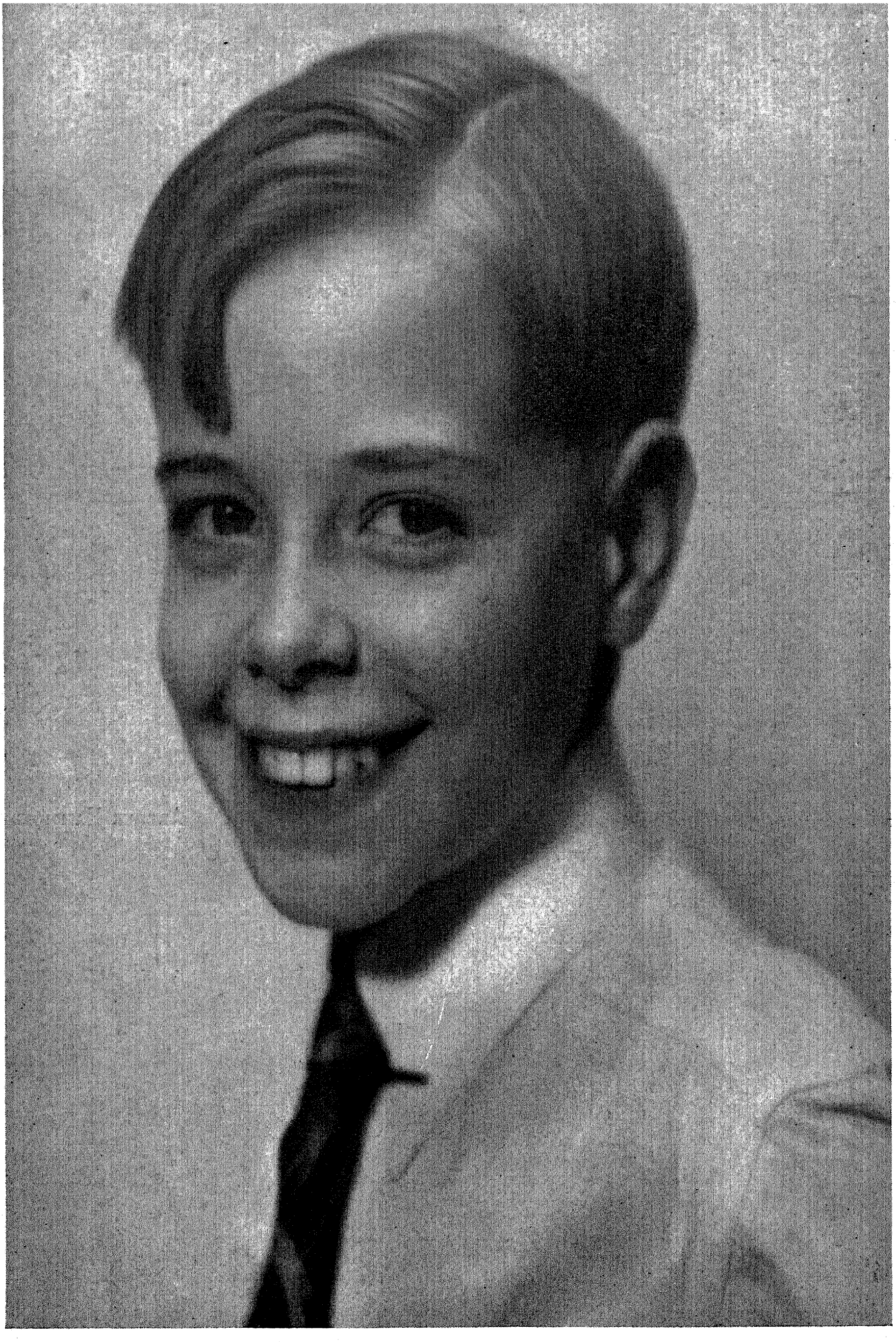


FIG. 18. AN AMERICAN BOY

ARTHUR HAMMOND

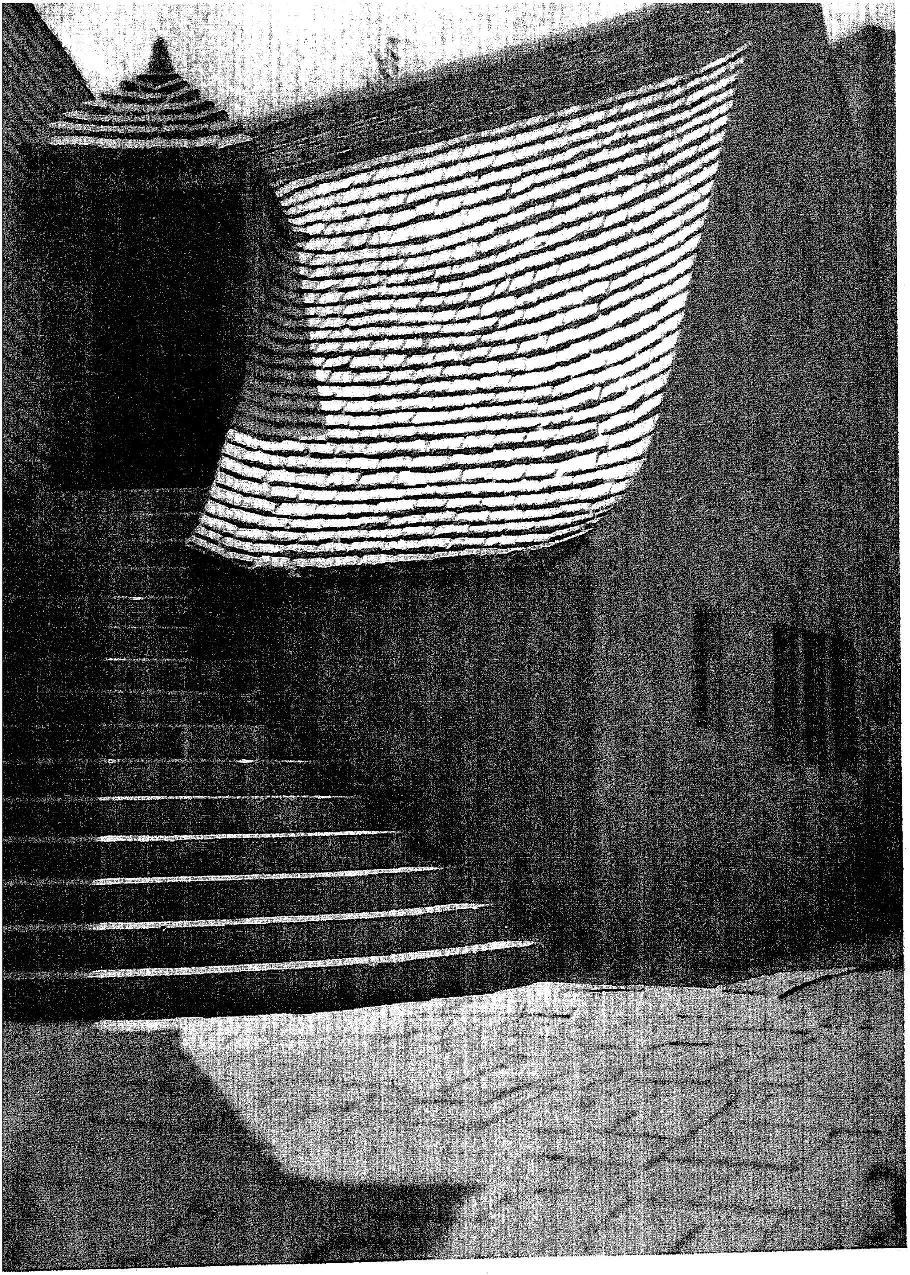


Fig. 19. SUN ON THE ROOF

Arthur Hammond

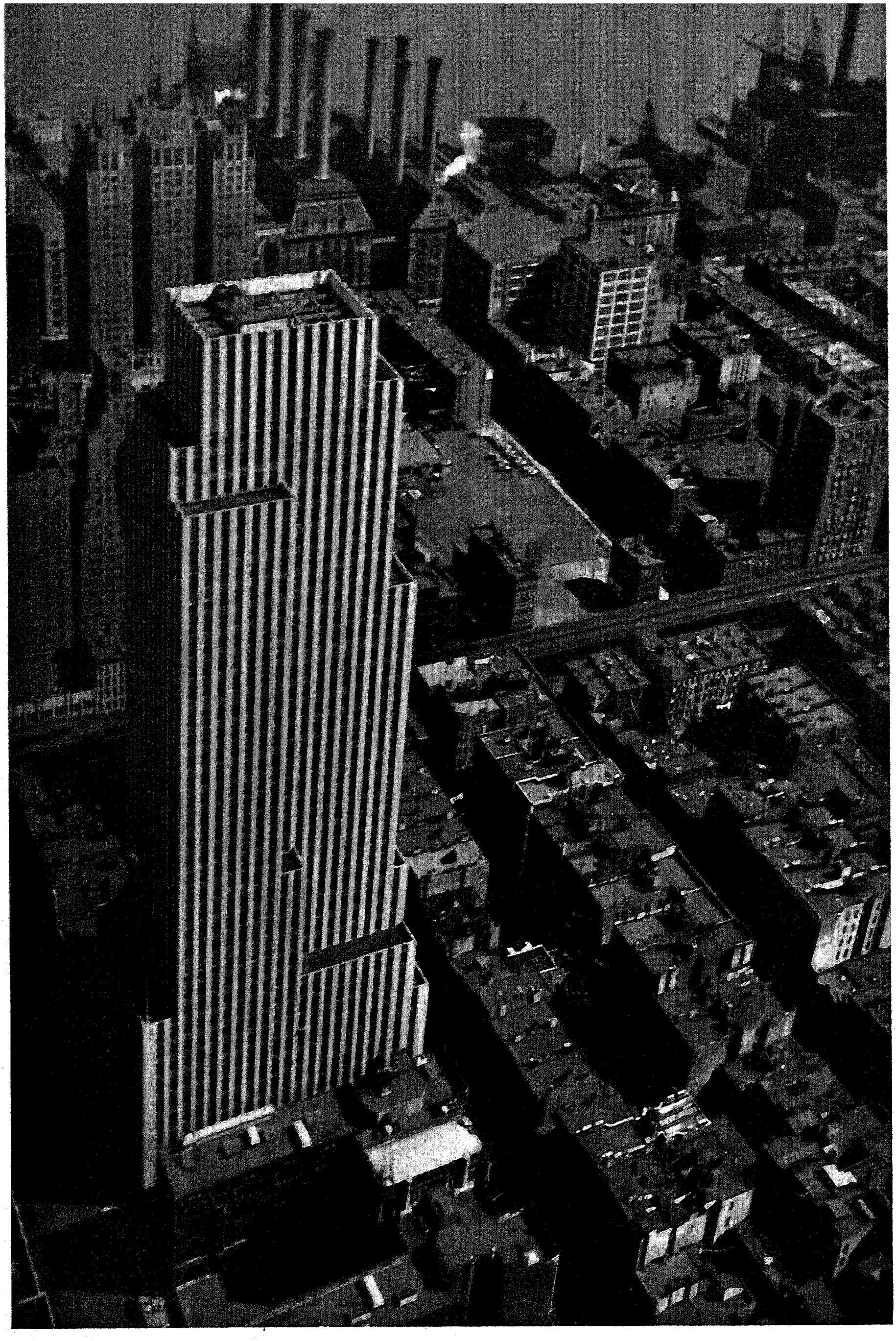


FIG. 20. NEWS BUILDING ARTHUR HAMMOND

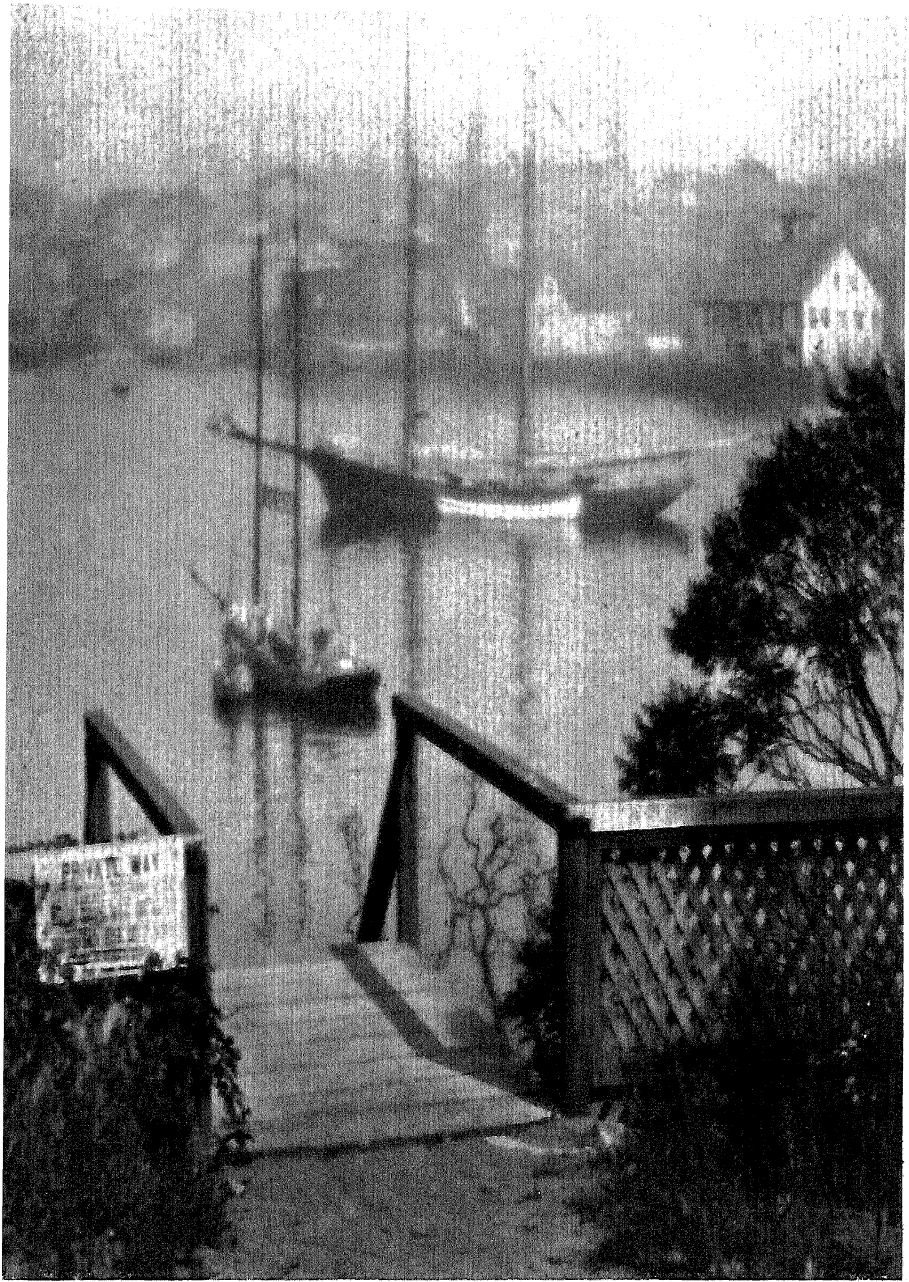


Fig. 21. SUMAC LANE

ARTHUR HAMMOND

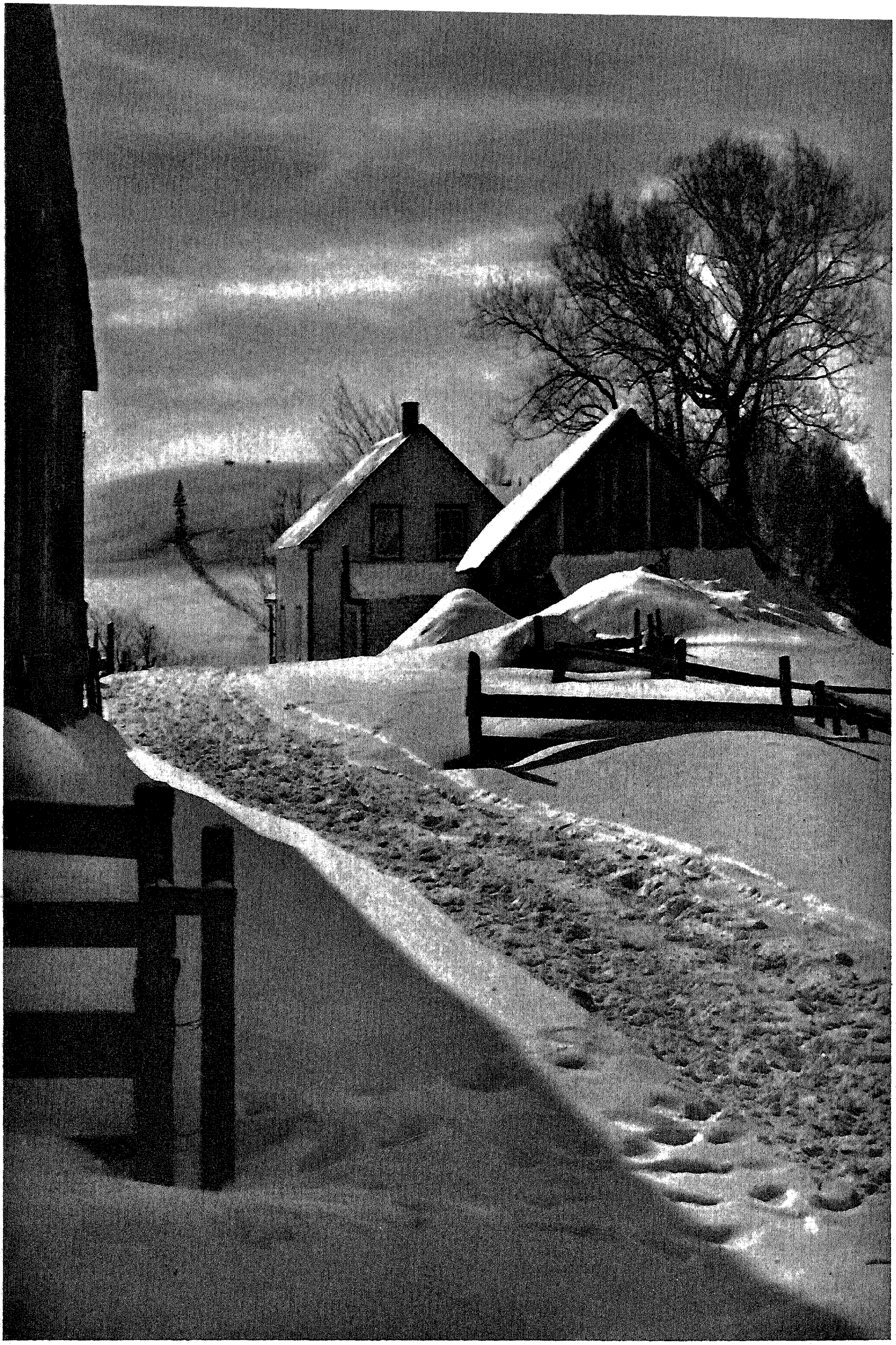


FIG. 22. WINTER EVE GUSTAV ANDERSON

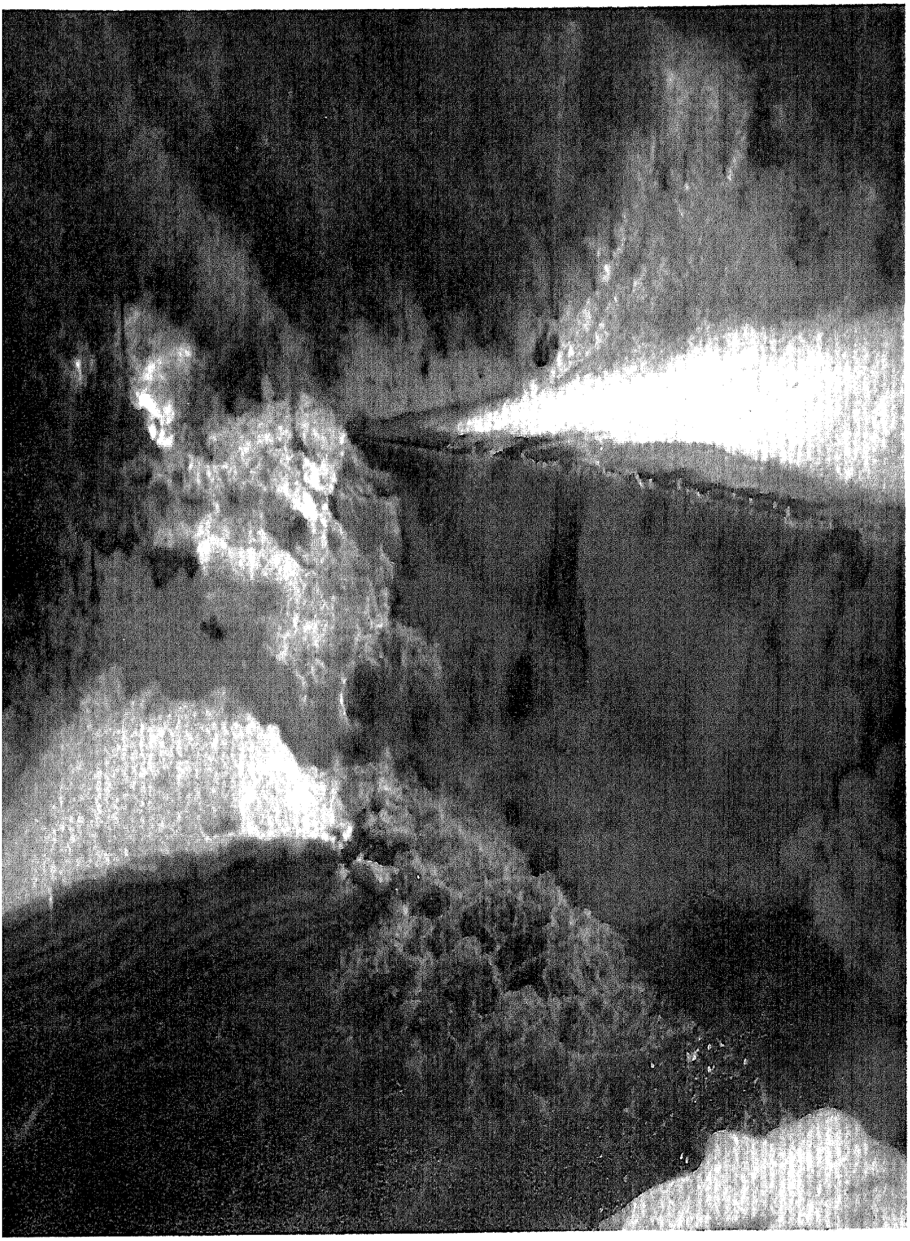


FIG. 27. THE FROZEN STREAM

FRANK R. FRAPRIE

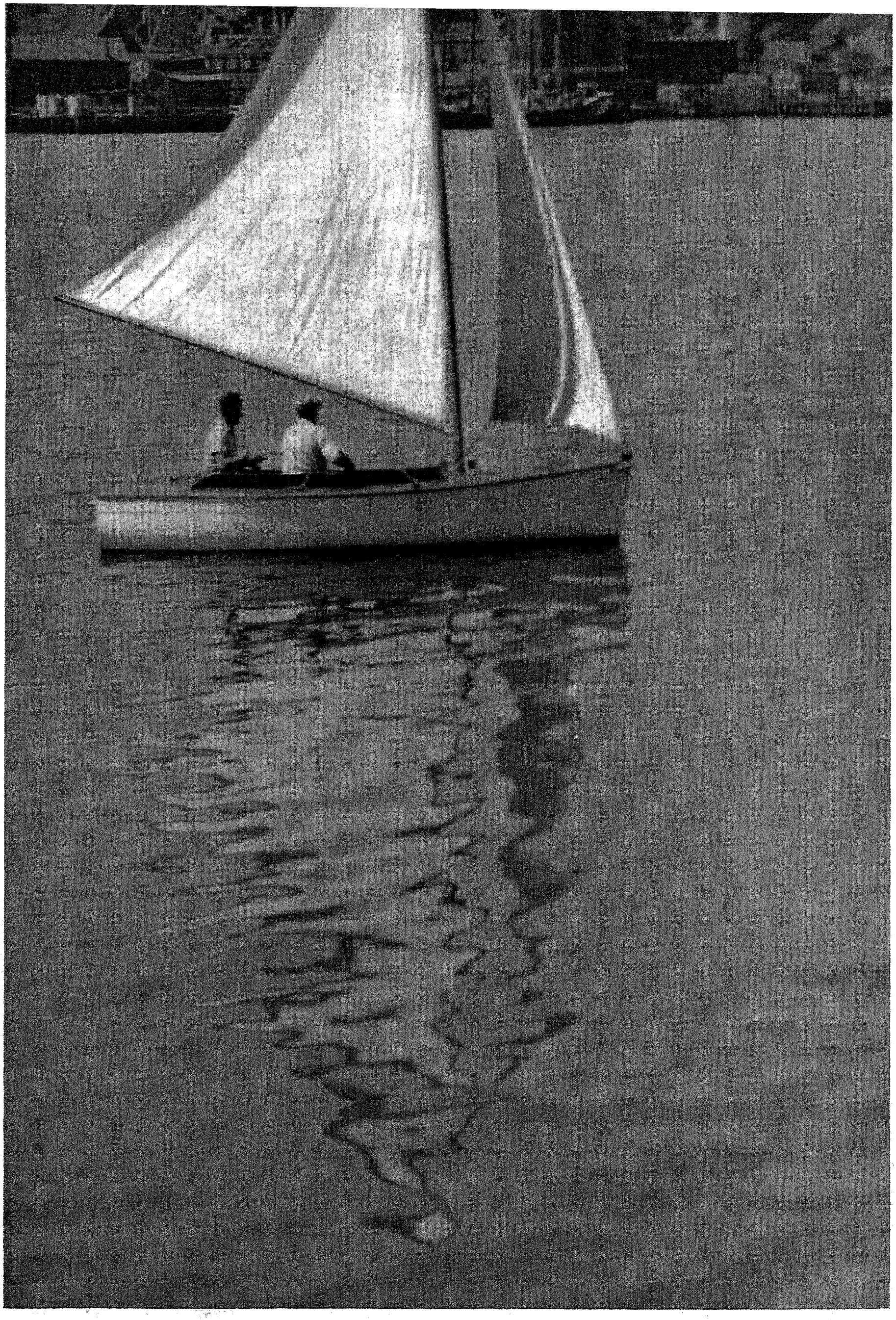
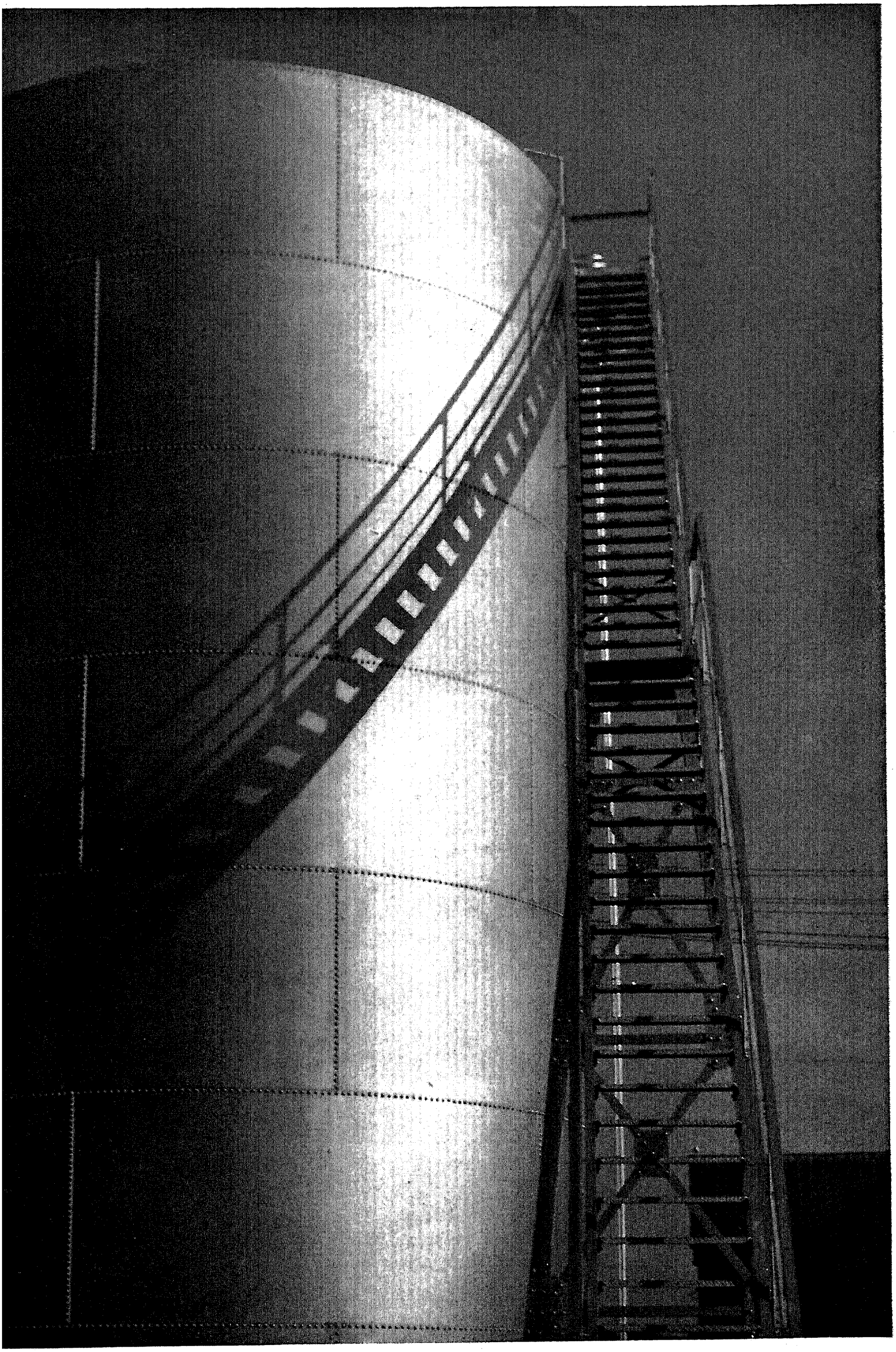


FIG. 28. SAILING

ARTHUR HAMMOND



G. 29. GAS TANK

ARTHUR HAMMOND

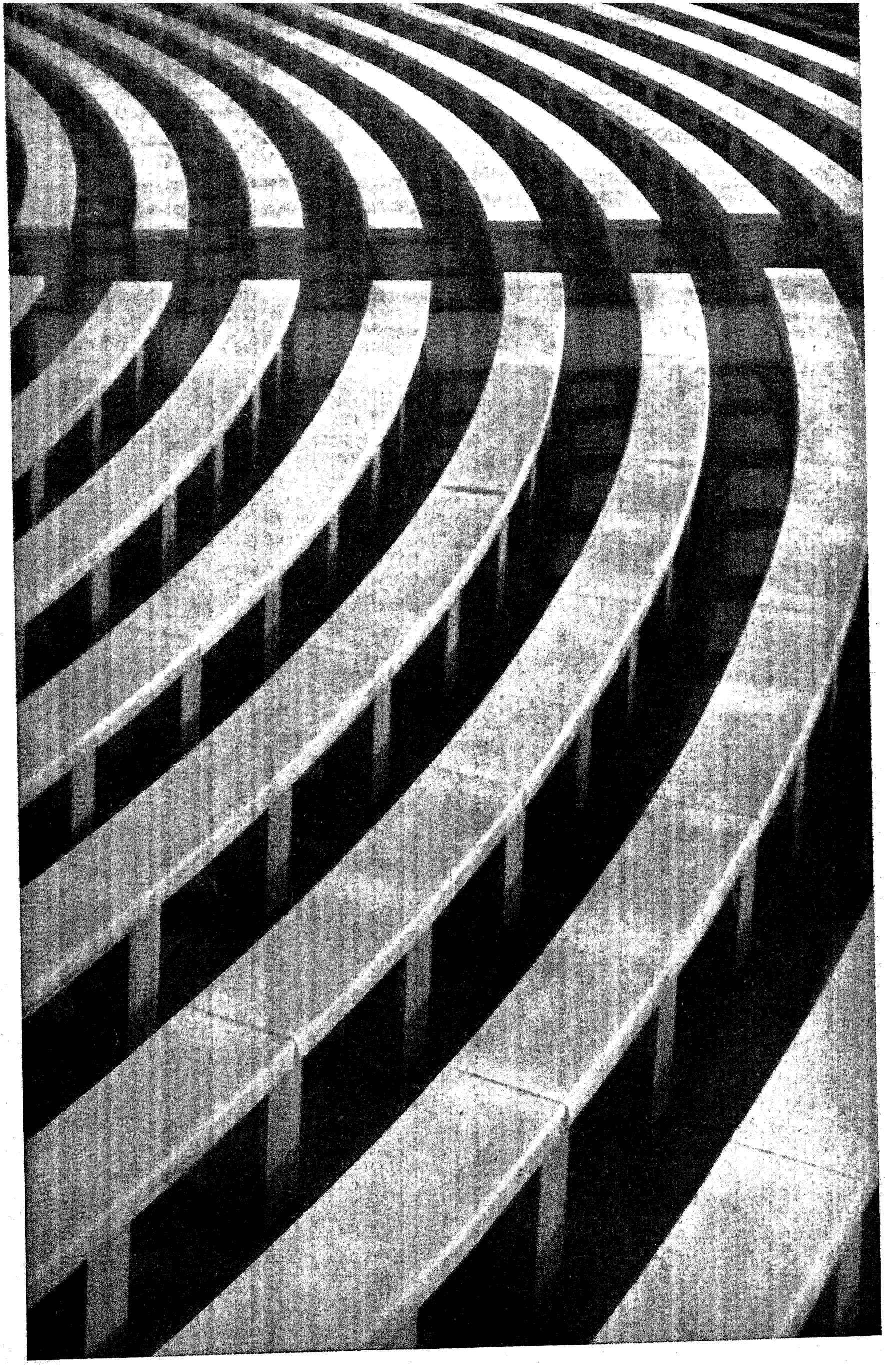
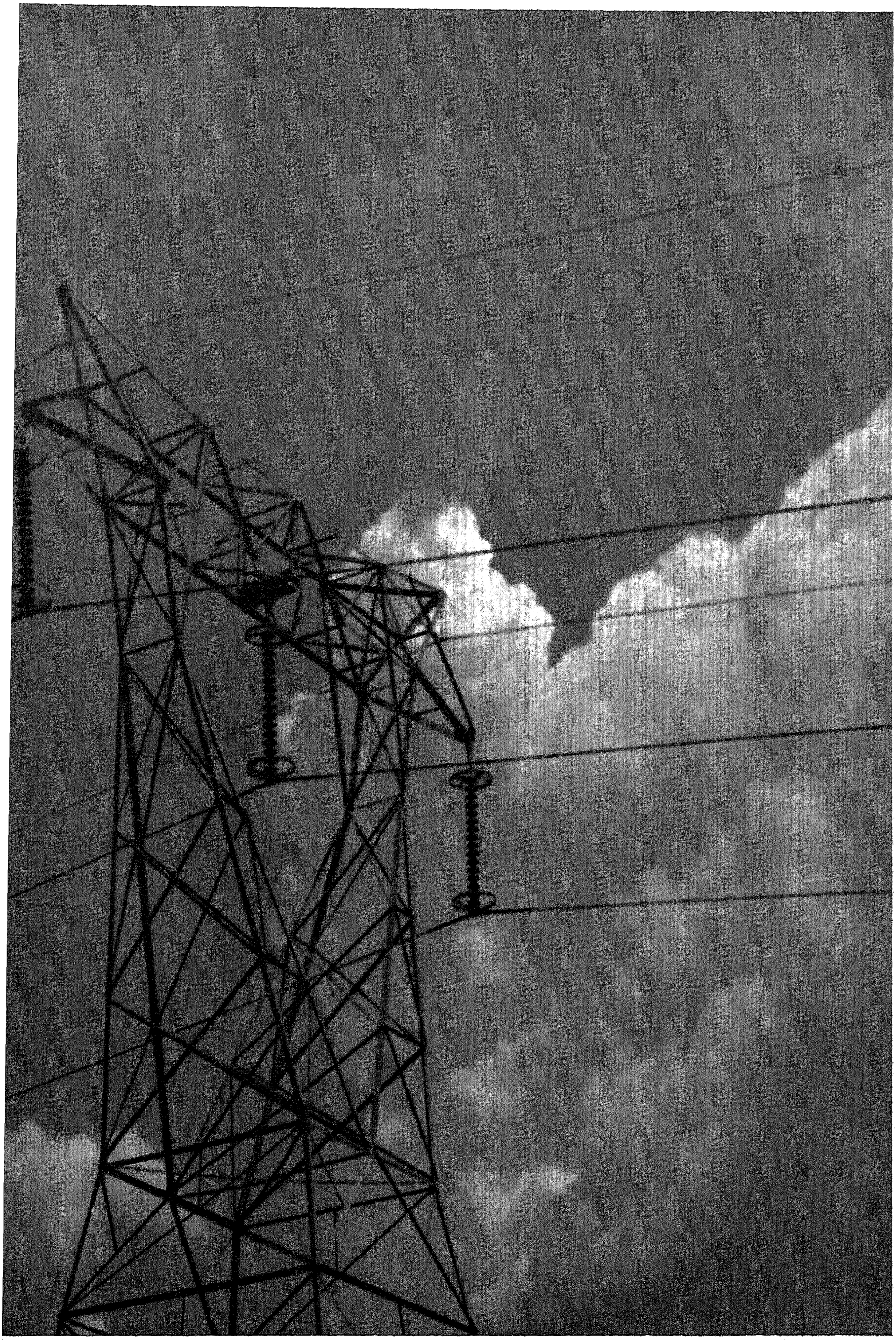


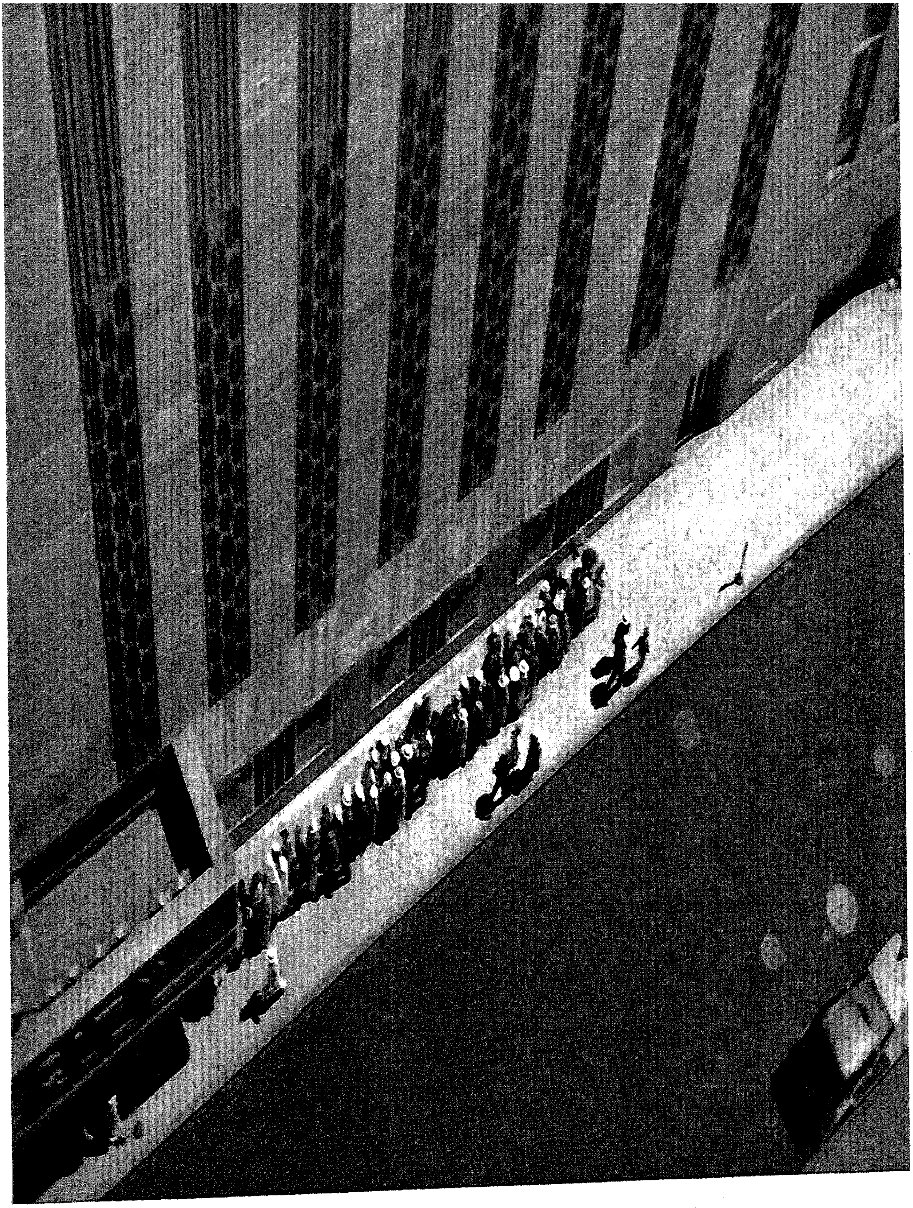
Fig. 30. EMPTY BENCHES

Arthur Hammond



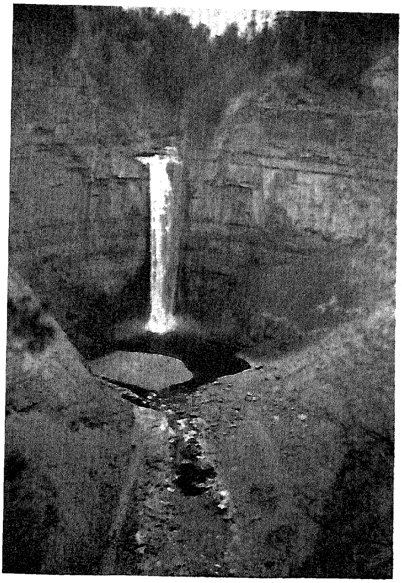
IG. 31. POWER

ARTHUR HAMMOND

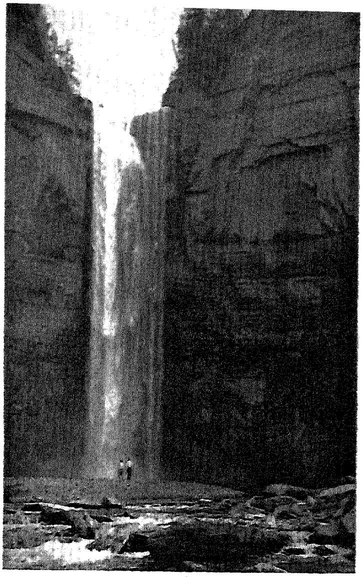


Arthur Hammond

Fig. 32. radio city



A

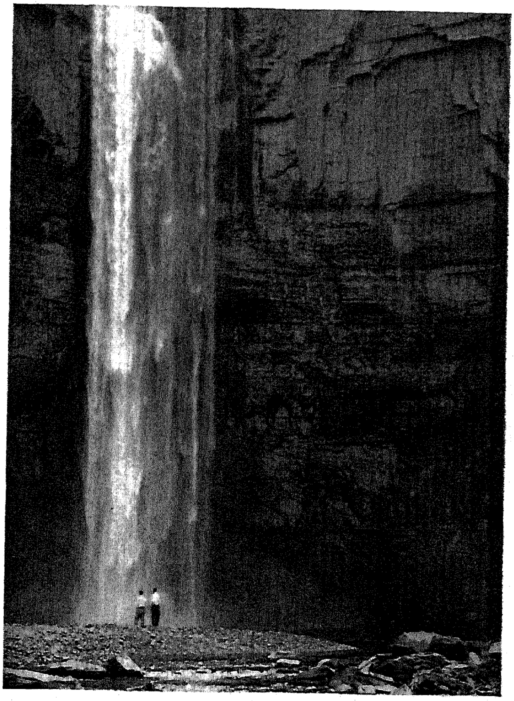


B

The falls as seen from the conventional viewing position.

As seen from below and a good deal nearer.

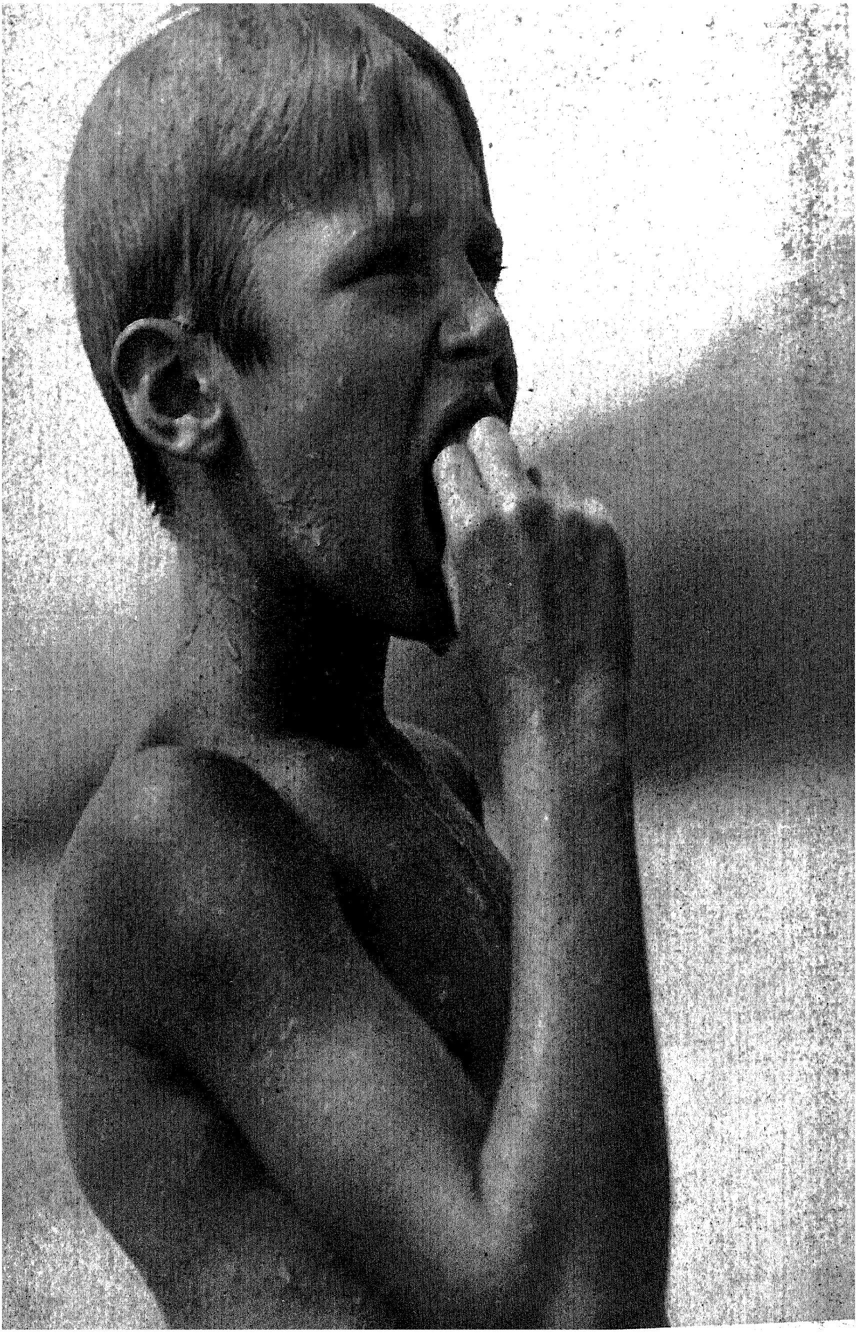
The final print with the sky trimmed off entirely to increase the impresssion of great height.



C

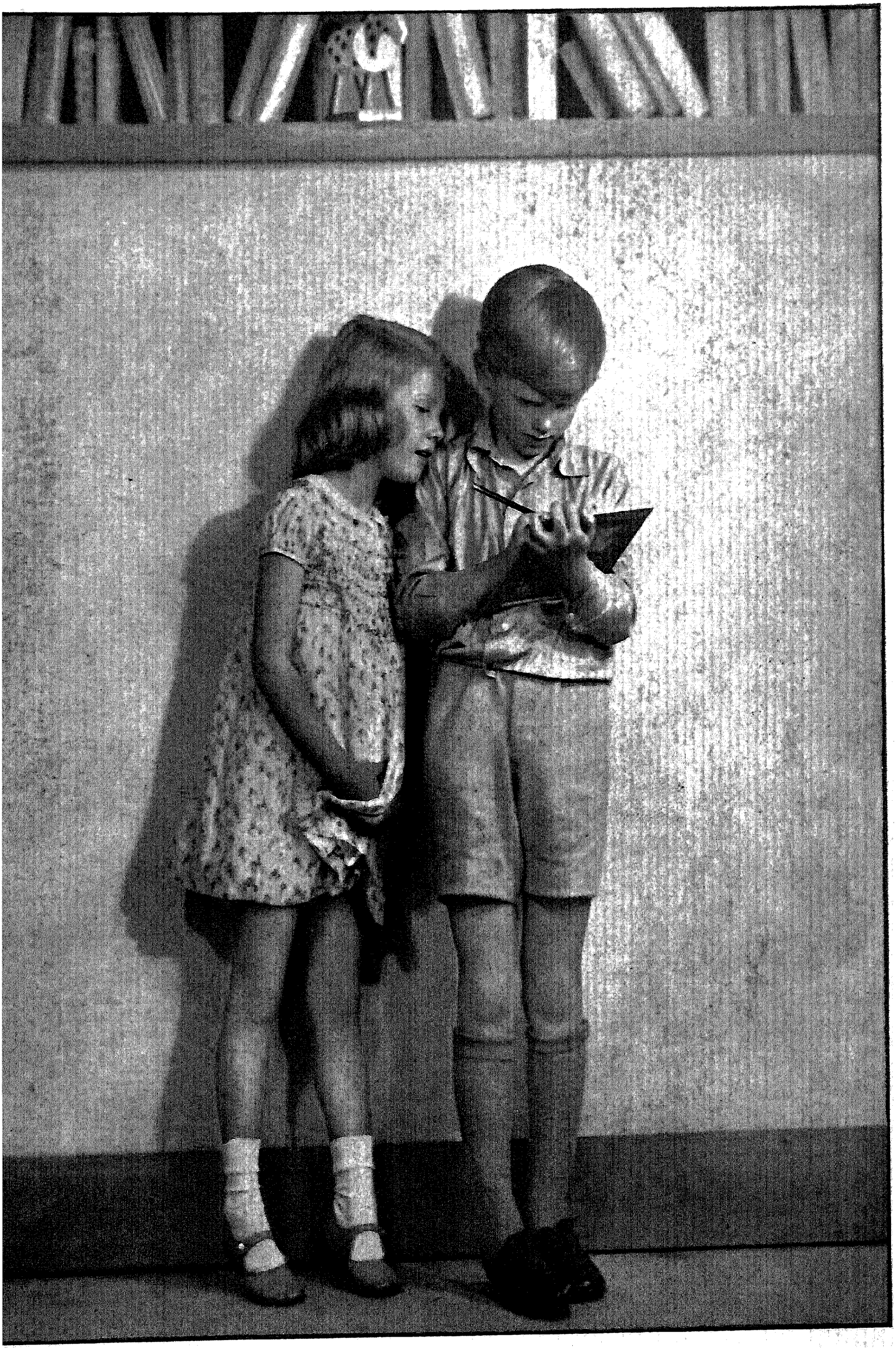
FIG. 33. TAUGHANNOCK FALLS

ARTHUR HAMMOND



Arthur Hammond

Fig. 34. all wet



IG. 35. GAY AND TESSA KINDERSLEY

DOROTHY WILDING

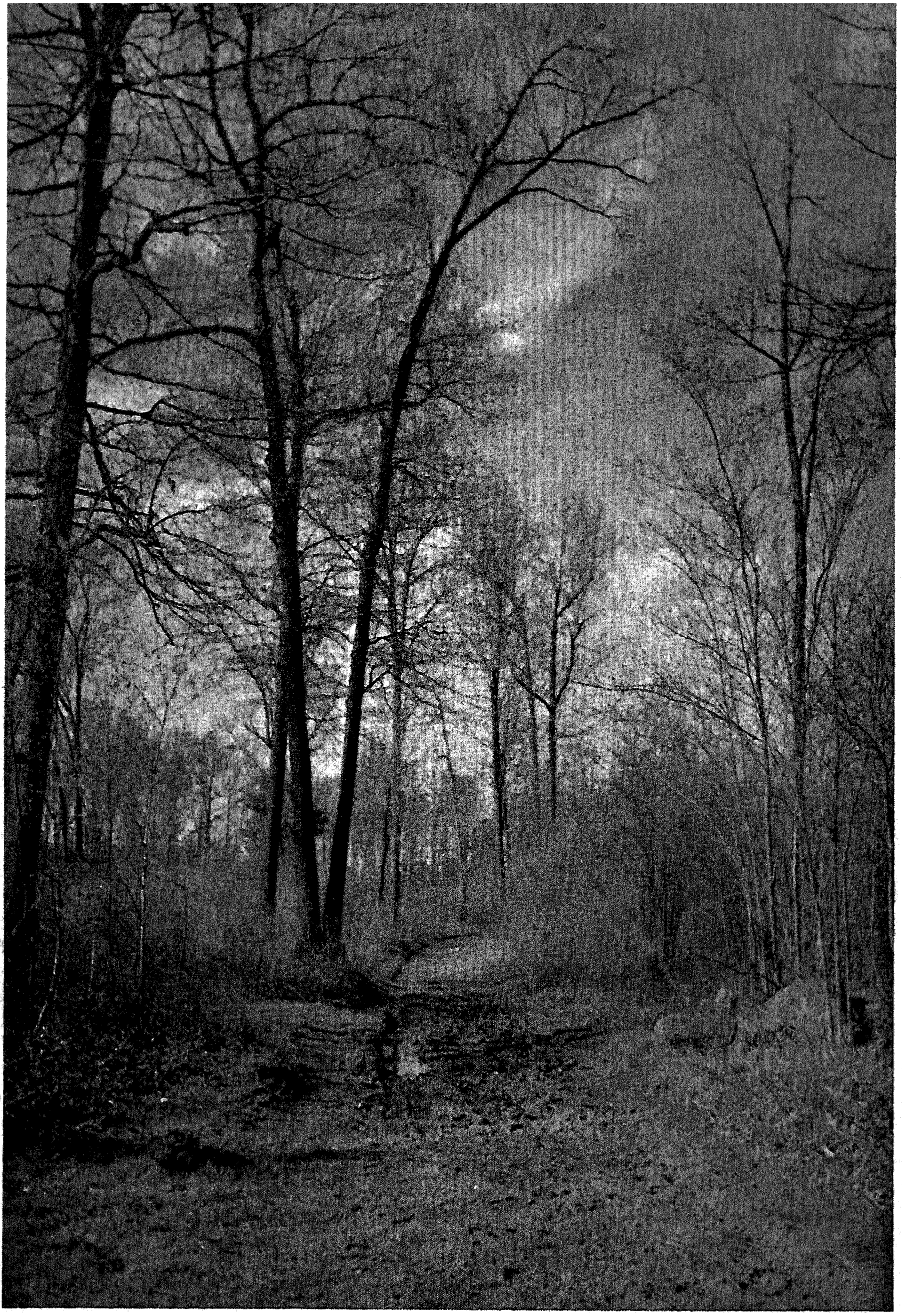


FIG. 36. EARLY SPRING

ARTHUR HAMMOND

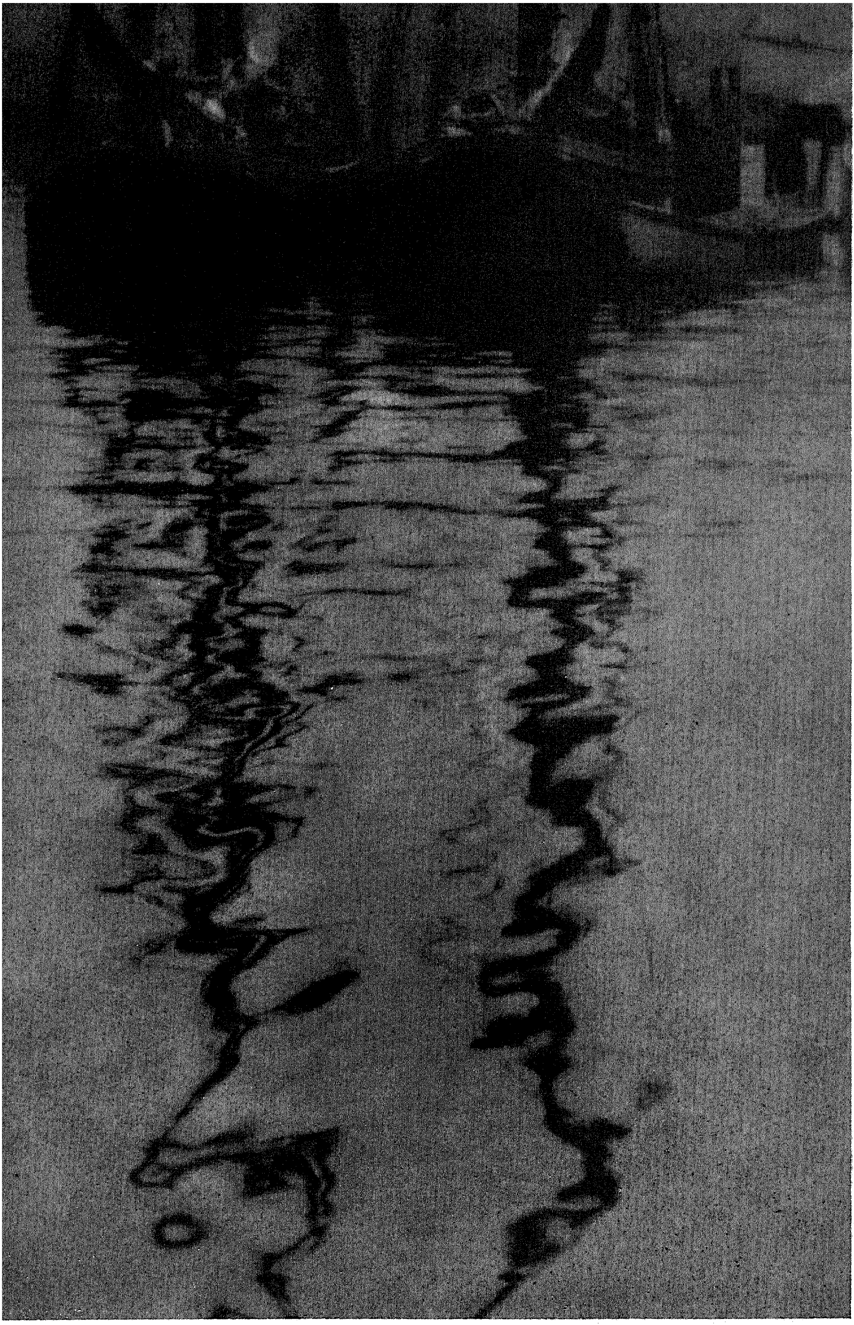


FIG. 37. EVENING SHADOWS ARTHUR HAMMOND

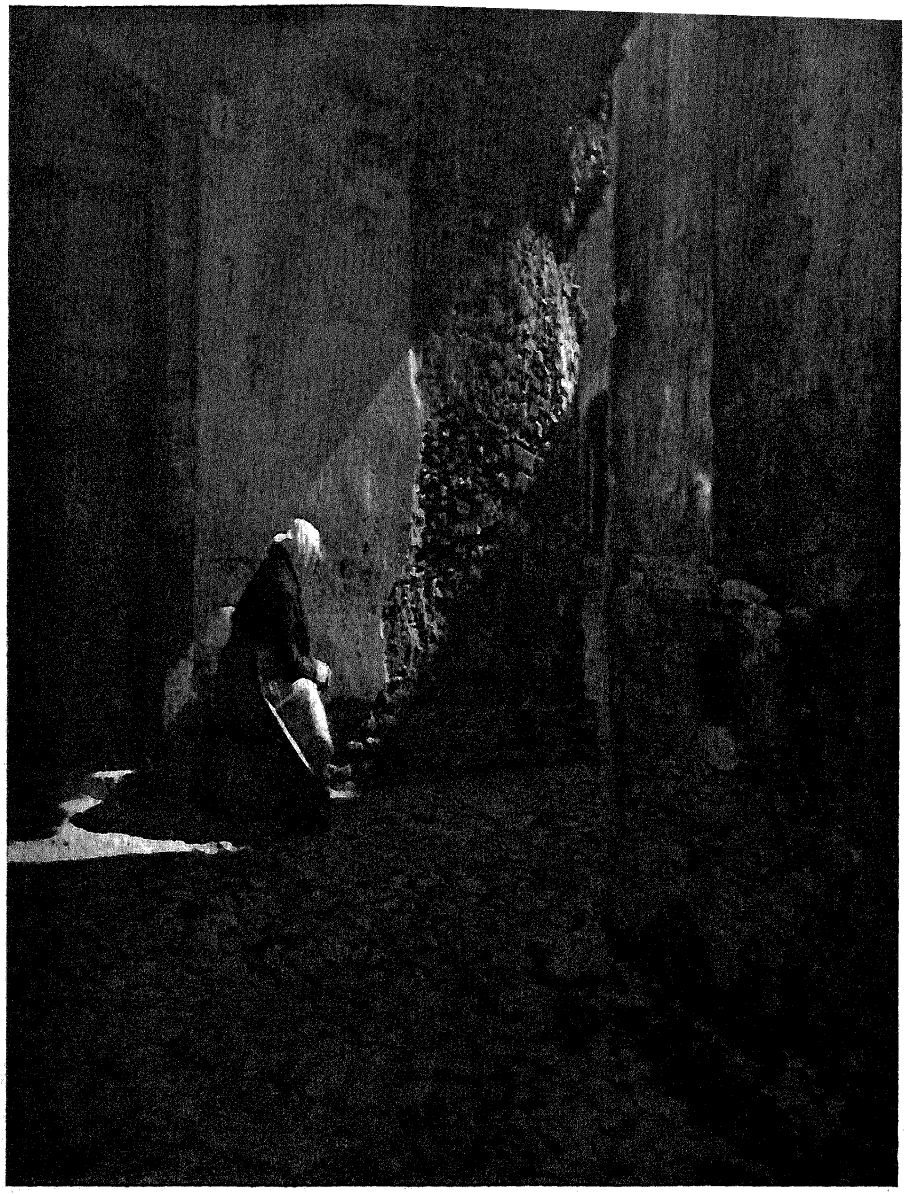


FIG. 38. WARMTH OF THE WINTER SUN FRANK R. FRAPRIE

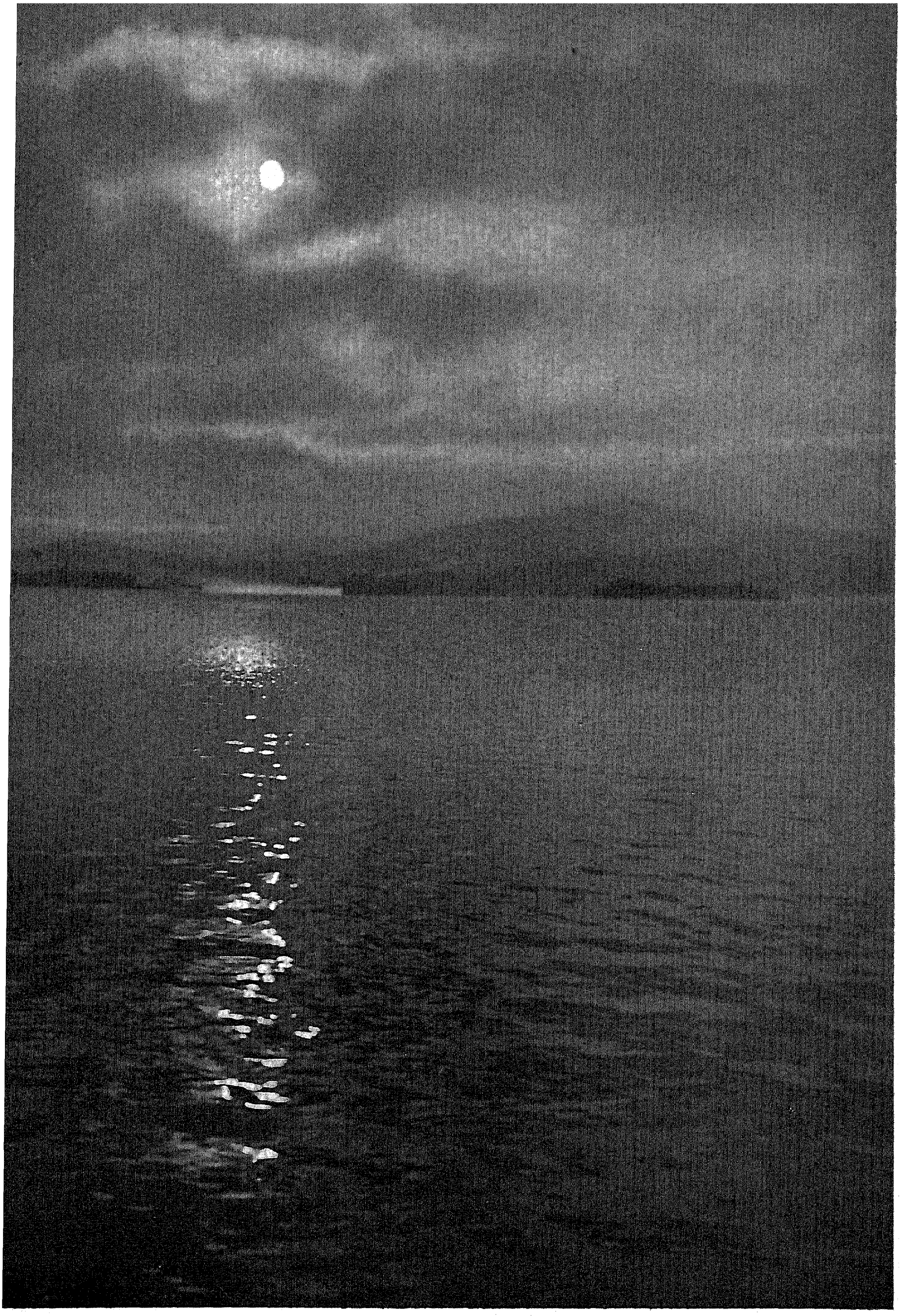


Fig. 39. sunrise Arthur Hammond

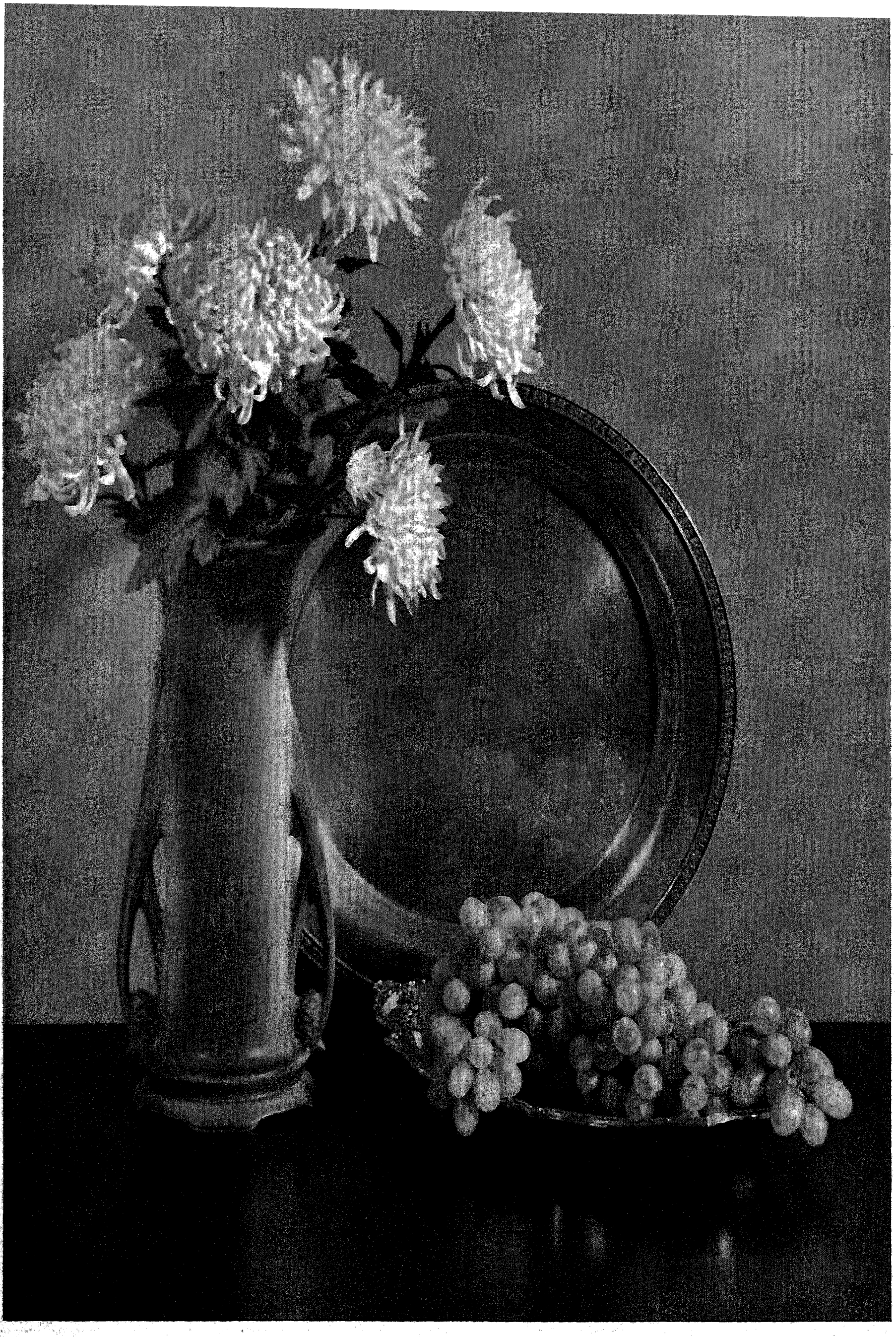
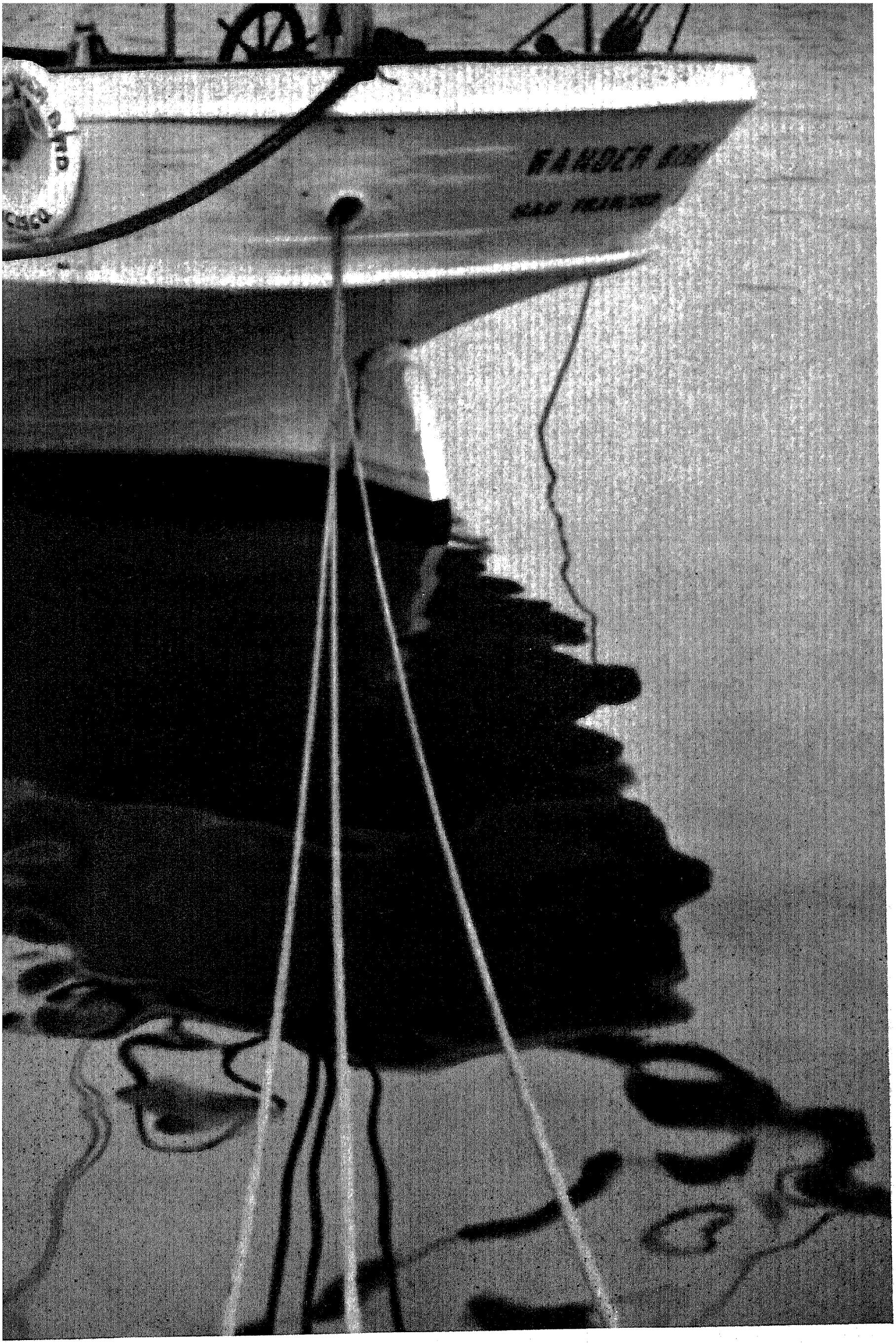


FIG. 40. SYMBOLS OF AUTUMN W. DOVEL LE SAGE



G. 41. WANDER BIRD

Arthur Hammond

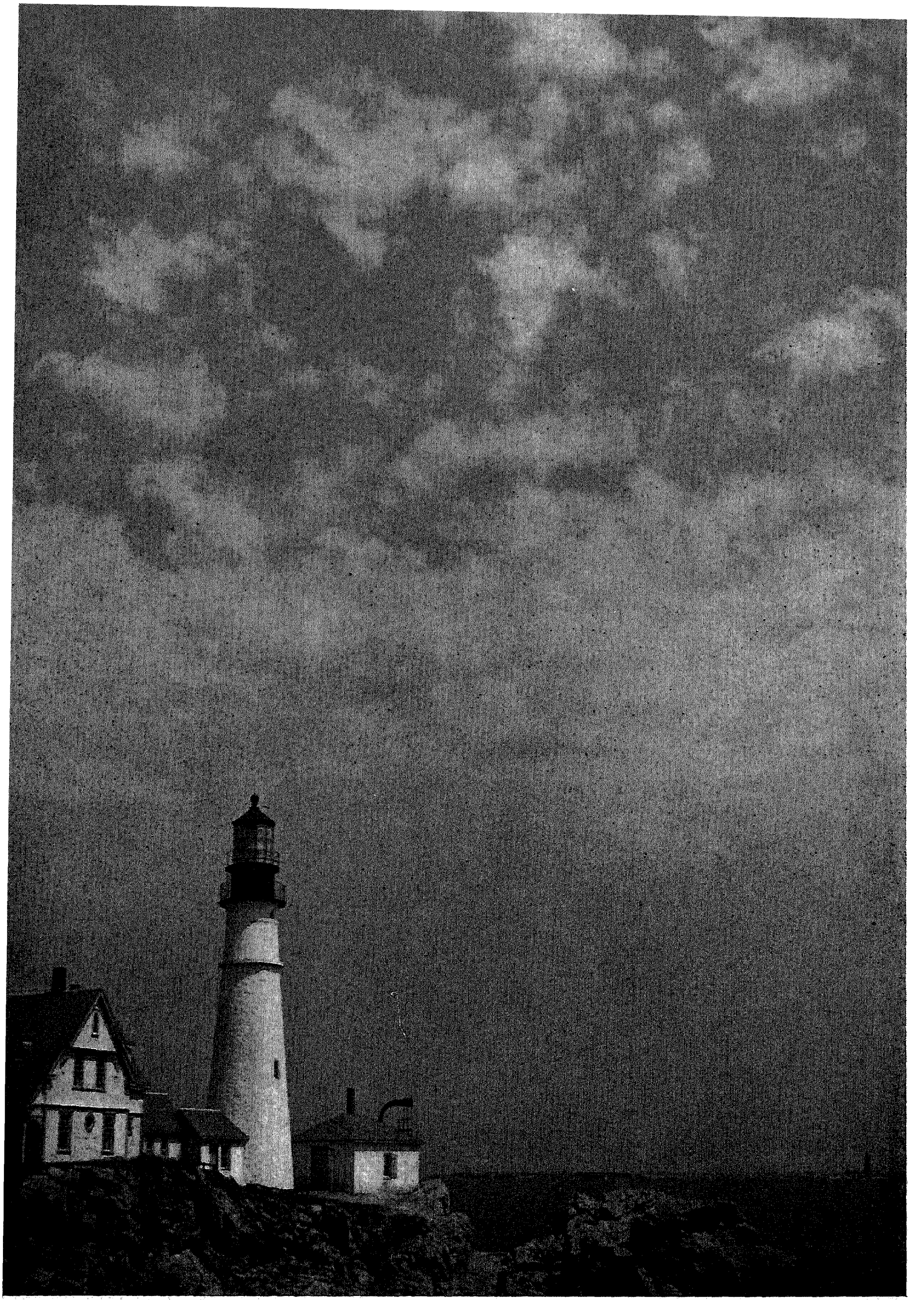
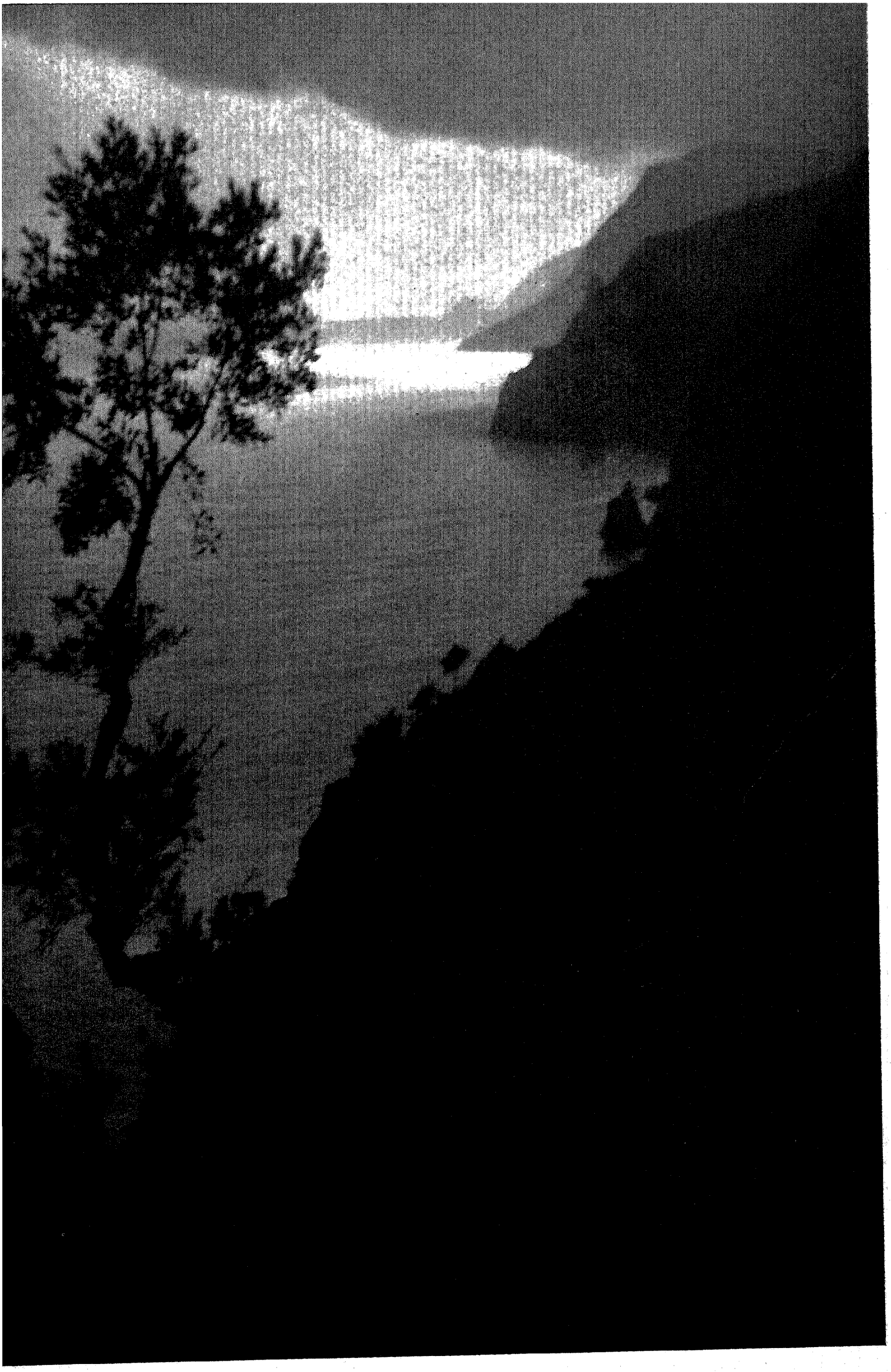


Fig. 42. CAPE ELIZABETH ARTHUR HAMMOND



G. 43. THUNDER OVER AMALFI

FRANK R. FRAPRIE

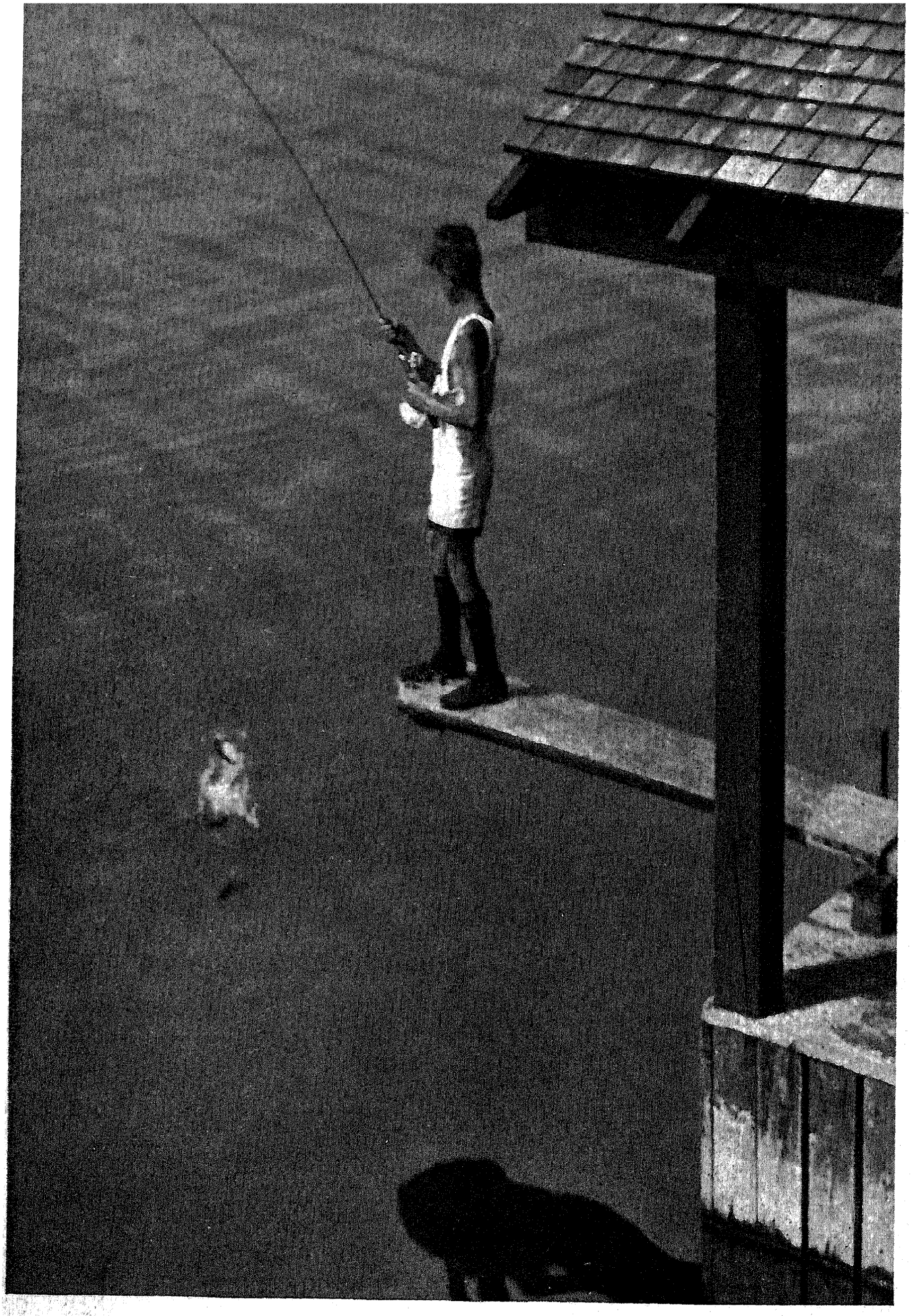
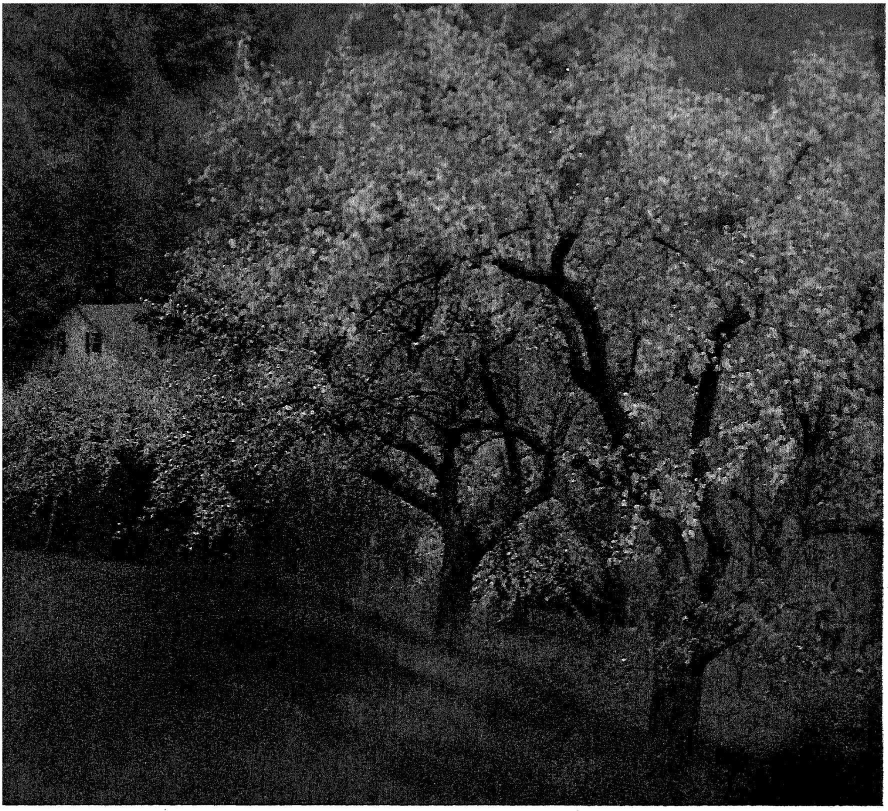


FIG. 44. THE ONE THAT GOT AWAY

ARTHUR HAMMOND



;. 45. APPLE VALLEY ARTHUR HAMMOND

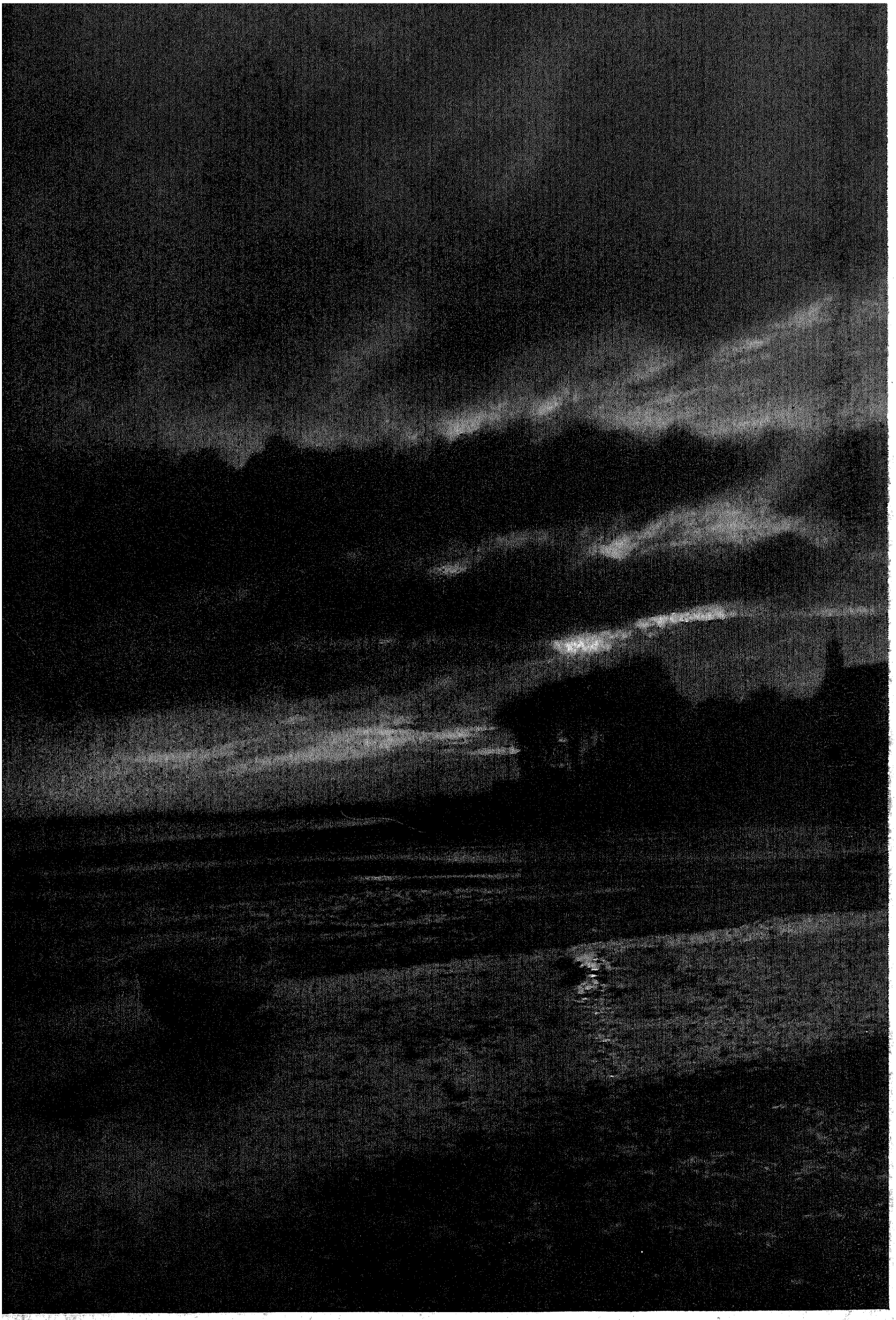
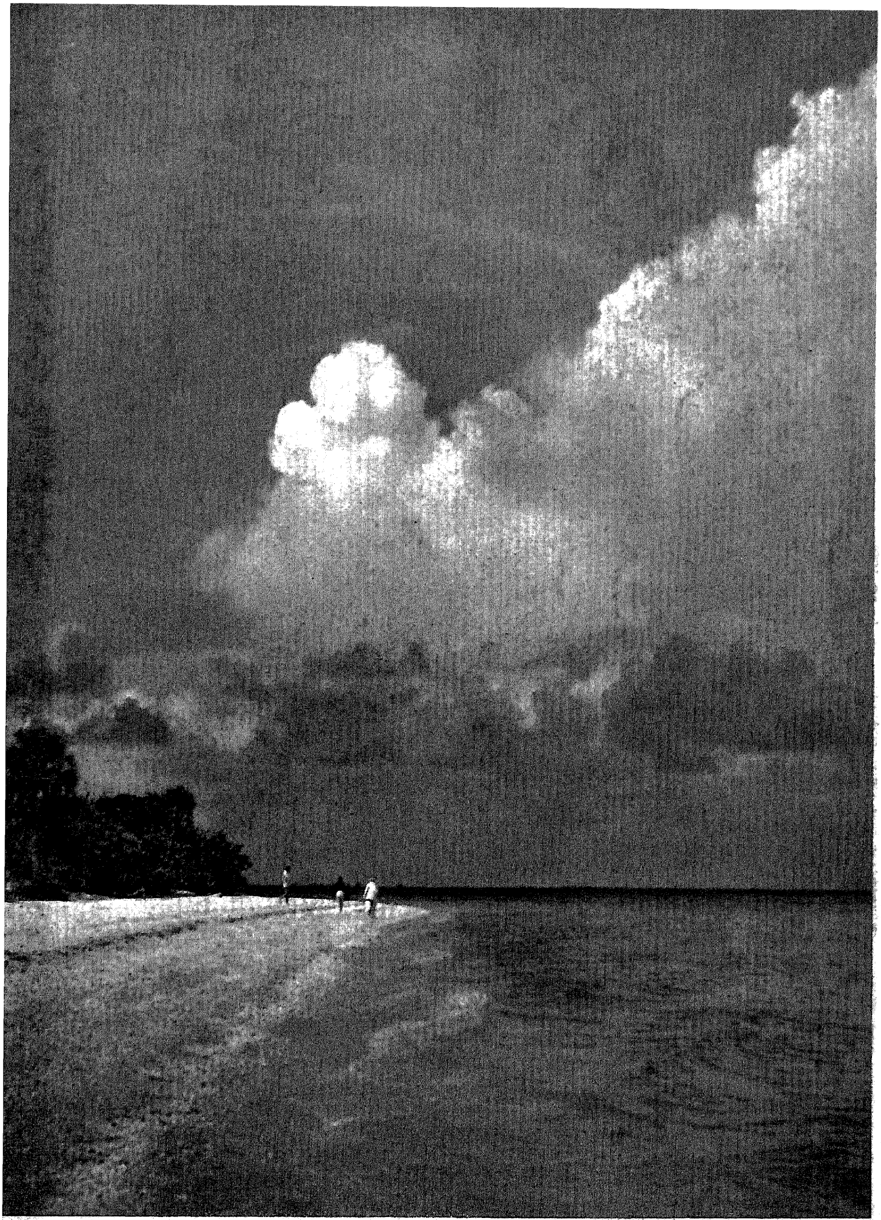


Fig. 46. SUNSET AT STONY BEACH

Frank R. Fraprie



IG. 47. SHELL BEACH

Arthur Hammond

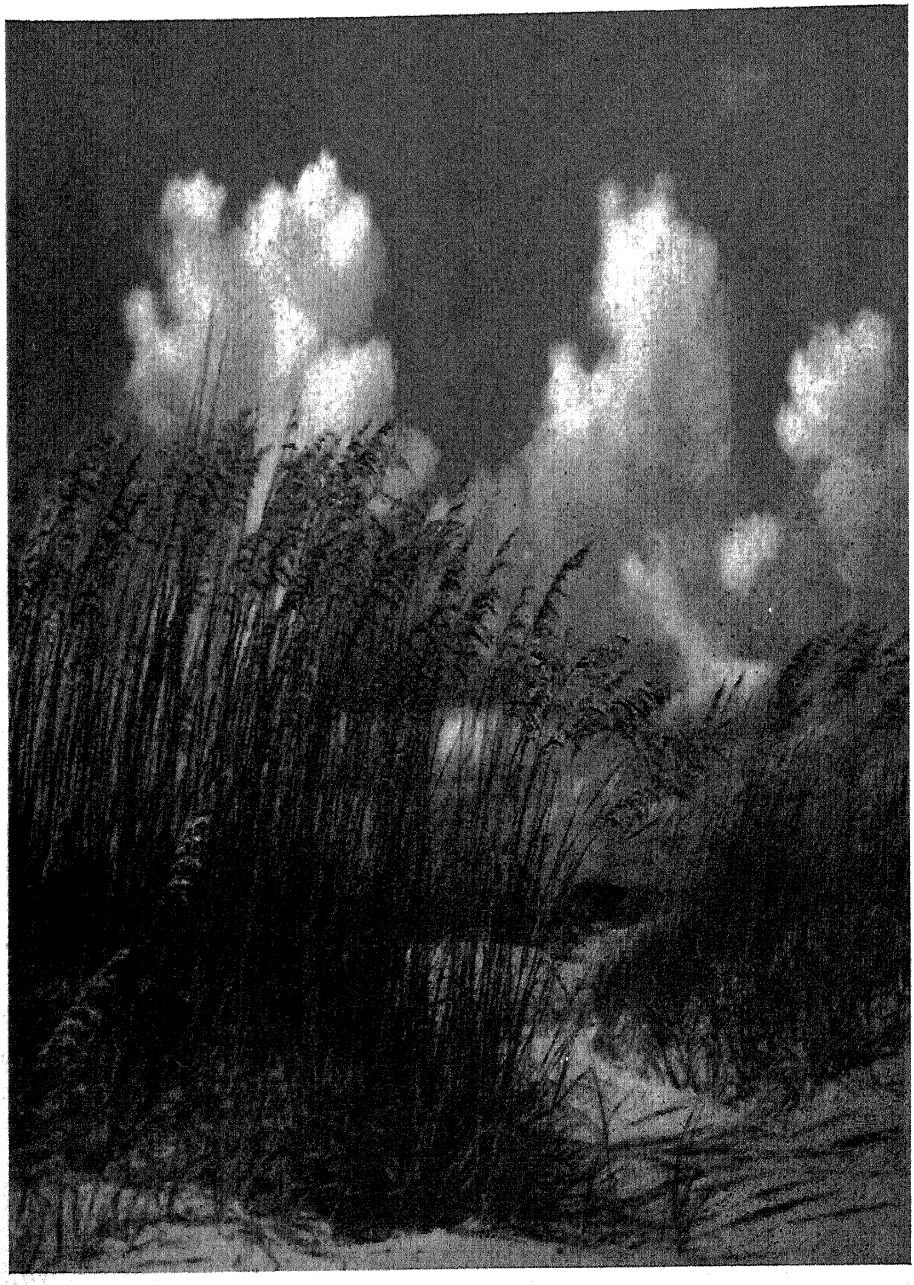


FIG. 48. SEA OATS

ARTHUR HAMMOND

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